

Estimating Inventory of Entrained Solids in Past Liquid Discharges to Waste Sites Located in the 200 Area of Hanford Site

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

CH2MHILL
Plateau Remediation Company

**P.O. Box 1600
Richland, Washington 99352**

Estimating Inventory of Entrained Solids in Past Liquid Discharges to Waste Sites Located in the 200 Area of Hanford Site

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APPROVED

By Sarah Harrison at 3:09 pm, Sep 28, 2020

Release Approval

Date

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ENVIRONMENTAL CALCULATION COVER PAGE

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| | |
|--|--|
| Project: Hanford Site Cumulative Impact Evaluation | RELEASE / ISSUE |
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| Qualifications Summary | |

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ENVIRONMENTAL CALCULATION COVER PAGE (Continued)

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Contents

| | | |
|----------|---|-----------|
| 1 | Purpose..... | 1 |
| 2 | Background..... | 2 |
| 3 | Methodology | 3 |
| 4 | Assumptions and Inputs | 4 |
| 5 | Software Applications..... | 5 |
| | 5.1 GoldSim | 5 |
| | 5.1.1 Description..... | 5 |
| | 5.1.2 Statement of Valid Software Application | 5 |
| 6 | Calculation..... | 6 |
| 7 | Results/Conclusions..... | 7 |
| | 7.1 Chemical and Radionuclide Inventories in Entrained Solids | 7 |
| | 7.2 Regrow (Back Decay) of Radionuclides | 24 |
| 8 | References | 38 |

Appendices

| | | |
|-----------|--|-----------|
| A. | Software Installation and Checkout Form | 39 |
|-----------|--|-----------|

Figures

| | |
|---|----|
| Figure 7-1. Comparison of Mean Estimate of Entrained Solids Inventory (kg) between SIM-v1 and SIM-v2 for Chemicals at Site 216-T-4A | 8 |
| Figure 7-2. Comparison of Standard Deviation Estimate of Entrained Solids Inventory (kg) between SIM-v1 and SIM-v2 for Chemicals at Site 216-T-4A..... | 8 |
| Figure 7-3. Comparison of Mean Estimate of Entrained Solids Inventory (Ci, Decayed to 1/1/2001) between SIM-v1 and SIM-v2 for Radionuclides at Site 216-T-4A | 9 |
| Figure 7-4. Comparison of Standard Deviation Estimate of Entrained Solids Inventory (Ci, Decayed to 1/1/2001) between SIM-v1 and SIM-v2 for Radionuclides at Site 216-T-4A..... | 9 |
| Figure 7-5. Comparison of Mean Estimate of Chromium Inventories in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2..... | 10 |
| Figure 7 6. Comparison of Mean Estimate of Chromium Inventories in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2 (Zoom In) | 10 |
| Figure 7-7. Comparison of Mean Estimate of Nitrate Inventories in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2..... | 11 |
| Figure 7-8. Comparison of Mean Estimate of Nitrate Inventories in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2 (Zoom In) | 11 |

Figure 7-9. Comparison of Mean Estimate of Total Uranium Inventories in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2 12

Figure 7-10. Comparison of Mean Estimate of Total Uranium Inventories in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2 (Zoom In) 12

Figure 7-11. Comparison of Mean Estimate of Uranium-238 Inventories (Ci, Decayed to 1/1/2001) in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2 13

Figure 7-12. Comparison of Mean Estimate of Uranium-238 Inventories (Ci, Decayed to 1/1/2001) in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2 (Zoom In) 13

Tables

Table 7-1. Mean of Cumulative Inventory (kg) from the Entrained Solids for Chemicals (2 sheets)^a 14

Table 7-2. Standard Deviations of Cumulative Inventory (kg) for the Entrained Solids for Chemicals (2 sheets)^a 16

Table 7-3. Mean of Cumulative Inventory (Ci) for the Entrained Solids for Radionuclide (Decayed to 1/1/2001) (3 sheets)^a 18

Table 7-4. Standard Deviation of Cumulative Inventory (Ci) for the Entrained Solids for Radionuclide (Decayed to 1/1/2001) (3 sheets)^a 21

Table 7-5. Mean of Cumulative Inventory of Radionuclides (Ci) for Entrained Solids Back Decayed to the Discharge Year (6 sheets)^a 26

Table 7-6. Standard Deviation of Cumulative Inventory of Radionuclides (Ci) for Entrained Solids Back Decayed to the Discharge Year (6 sheets)^a 32

Terms

| | |
|--------|---------------------------------------|
| CHPRC | CH2M HILL Plateau Remediation Company |
| DOE | U.S. Department of Energy |
| ECF | environmental calculation file |
| HDW | Hanford defined waste |
| SIM-v1 | soil inventory model version 1 |
| SIM-v2 | soil inventory model version 2 |

1 Purpose

The purpose of this environmental calculation file (ECF) is to reproduce the inventory of entrained solids originally estimated using Soil Inventory Model Version 1 (SIM-v1) (RPP-26744, *Hanford Soil Inventory Model, Rev. 1*) by using the updated calculation approach adopted in Soil Inventory Model Version 2 (SIM-v2) (CP-59798, *Model Package Report: Hanford Soil Inventory Model SIM-v.2, Build 1*). The SIM-v2 is implemented using GoldSim Pro®1 software with a new model architecture that preserves the uncertainty in inventory estimates while reducing the computational burden (compared to the previous version) and allowing more traceability and transparency in calculation methodology. The calculation architecture was designed in such a manner that future updates to the waste stream composition along with addition or deletion of waste sites can be performed easily (ECF-HANFORD-17-0079, *Hanford Soil Inventory Model (SIM-v2) Calculated Radionuclide Inventory of Direct Liquid Discharges to Soil in the Hanford Site's 200 Areas*).

All the inputs and assumptions made in SIM-v1 were adopted without any modification towards calculation of the inventory of entrained solids (using SIM-v2 calculation architecture). In SIM-v1, some selected waste streams were assumed to have entrained solids fraction during discharge of liquids to the cribs and trenches. The primary reason appears to be related to simplified solubility models considered for certain analytes in the Hanford Defined Waste (HDW) model Rev. 5 model (RPP-19822, *Hanford Defined Waste Model – Revision 5.0*), which is used for deriving the waste stream compositions in SIM. Due to the simplification in solubility estimates in HDW Rev. 5, the waste stream compositions for certain analytes may not have been predicted accurately and it appears that SIM-v1 compensated for these limitations by assuming entrained solids fraction. It is worth noting that the default condition in SIM-v1 is not to incorporate entrained solids. Only 70 sites have the entrained solids inventory contributions.

While it is plausible that some waste streams may have included entrained solids, resulting from poor in-tank settling operations, piping failures, or from waste streams derived from fuel fabrication process or cold-start waste, it is not possible to quantify the relative amounts because the conditions that foster solids formation and entrainment are highly variable and not well understood. Because of this lack of knowledge (uncertainty), the entrained solids inventory was not considered in ECF-HANFORD-17-0079. However, in order to be consistent with the SIM-v1 reported inventory for entrained solids, a separate calculation is performed here. The intent is to use this information towards estimating inventory for site-wide evaluation (such as the Composite Analysis and Cumulative Impacts Evaluation) as source-term inputs to the vadose zone fate and transport models.

As mentioned earlier, the purpose of this ECF is to simply calculate and reproduce the inventory of entrained solids originally estimated using SIM-v1. In the future, the solubility models may need to be evaluated and the waste stream compositions used in SIM may need to be revised.

2 Background

SIM generates the basic radionuclide and chemical soil inventories from historical liquid discharges to about 350 sites at the Hanford Site. The calculations account for 29 chemicals along with 46 radionuclides in the waste streams over 58 years (1944-2001) (CP-59798). The first version of SIM (SIM-v1) was released in 2005. The SIM-v2 incorporates the same basic information as SIM-v1 but applies corrections and updates to the input volume and waste stream compositions associated with historical liquid discharges.

Because of the waste management and surveillance practices employed during production operations and the general physical constraints of the system with regard to particulate entrainment (radiation monitors, settling tanks, no agitation, passive filtration, etc.), very few waste streams disposed to the past-practice sites are considered to possess solids. Therefore, SIM-v1 incorporates entrained solids into its calculations for radionuclide and chemical inventories (CP-59798). The default condition for SIM-v2 is not to consider entrained solids due to the lack of specific knowledge and due to consideration of uncertainty in the waste stream compositions.

It has been found that on a site-year basis, about 6% of the inputs have solids; on a strict site basis, 21% received solids (RPP-26744).

3 Methodology

The estimation of the radionuclide and chemical inventories in the solid fractions of the liquid waste streams at various waste sites was achieved by processing the SIM-v1 inputs for all the sites with entrained solids using the SIM-v2 model calculation approach.

According to RPP-26744, SIM executes a basic equation that computes the mass or activity for a constituent in liquid discharges. The general form of this equation is:

$$I = \rho \times C \times V \quad (\text{Equation 3-1})$$

Where,

- I = inventory in liquid discharge
- ρ = density of liquid
- C = concentration
- V = volume of liquid discharge

Because in some cases there are entrained solids included as part of the overall inventory, both the liquid and solid phases of a waste stream must be computed, resulting in a slightly more complicated version of the equation:

$$I = \rho_l \times C_l \times V_t \times (1 - V_{\%s}) + \rho_s \times C_s \times V_t \times V_{\%s} \quad (\text{Equation 3-2})$$

Where,

- I = inventory in liquid discharge
- ρ_l = density of liquid
- C_l = concentration of liquid
- V_t = volume of total discharge
- $V_{\%s}$ = volume of percent solids
- ρ_s = density of solids
- C_s = concentration of solids

The form of the equations was selected based on the observed prevalence of the units associated with the analytical data (RPP-26744). Liquid waste disposal sites and unplanned releases generally have waste type and volume assignments available from historical information (Appendix G of ECF-HANFORD-17-0079).

4 Assumptions and Inputs

The input file for estimating radionuclide and chemical inventories using the SIMv2 model contains statistical distributions of independently sampled volume, density, and concentration of the evaluated analytes (29 chemicals and 46 radionuclides).

Input distributions were used as designed in the earlier work of SIM-v1 (RPP-26744) without any changes. For justification and assumptions of the input parameters the reader is referred to RPP-26744. Input distributions were selected from the following distribution types: normal, triangular, lognormal, exponential, generalized Beta and null (zero). Each input record for either density, volume, or concentration assigns a distribution type and the input structure required by that distribution. Detailed descriptions of the distribution functions are listed in CP-59798. It is recognized that, for those cases where solids are included, significant data analysis and/or data manipulation are sometimes necessary to parameterize the volume percent solids quantity. Some analytes (e.g., uranium, strontium-90, plutonium) existed in waste streams almost entirely in the solid phase and were present in waste streams in high concentrations (in the absence of organic complexants) only if entrained (RPP-26744). Thus, the site inventory of one or more of these analytes is often used to determine the volume percent solids content of a contributing waste stream, while endeavoring to maintain the analyte inventory correlation inherent in the waste site reference data (RPP-26744).

For this specific SIM-v2, calculation effort for the chemical and radionuclide inventories in the entrained solids, the input parameters are based on the inputs from SIM-v1. While maintaining all the input parameter values for the analytes in solid to be the same, all the input parameter values for the analytes in liquid phase are set to 0.

The input distribution parameters are used by the SIM-v2 model for calculating the arithmetic mean and standard deviation of the inventory over time for each site and analyte. These calculations result in estimation of entrained solids inventory for 70 waste sites.

The input file for modeling the radionuclide and chemical inventories in the entrained solids consists of the following components in Excel worksheets:

- Site Input
- Analyte Input
- Density Input
- OPU Sites; and
- Correction Factors.

The detailed descriptions of these components are presented in RPP-26744.

The following programs were run to generate the inventory results:

- SIM_Analytic.gsm
- GS_SIM_Batch.bat

5 Software Applications

This section describes the utility and approved software used to estimate the chemical inventories in the entrained solids that were released with liquid discharges to the sites in the 200 Areas of the Hanford Site. Software was used consistent with requirements of a CH2M HILL Plateau Remediation Company (CHPRC) controlled software management procedure that implements the requirements of DOE O 414.1D, *Quality Assurance*.

Microsoft Excel¹ was used as utility tool for calculation and organizing the SIM-v2 output. GoldSim² was the controlled and approved software for SIM-v2 modeling.

5.1 GoldSim

GoldSim[®] was the selected primary software to implement the SIM-v2 model. GoldSim is approved for use at the Hanford Site and is graded Level C software. GoldSim use at Hanford for this class of problems is managed under the CHPRC software quality assurance documents.

5.1.1 Description

The following required information is provided for the software package used in the calculation:

Software Title: GoldSim Pro

Software Version: 11.1.5

HISI Identification Number: 2461

Workstation type and property number: INTERA-00799

A copy of the Software Installation and Checkout form for the workstation used is provided in Appendix A.

5.1.2 Statement of Valid Software Application

The use of GoldSim for implementation of SIM-v2 is an appropriate application of this software. It is consistent with the functional requirements of SIM-v2 and within its limitations as defined in CHPRC controlled software management procedure.

¹ Microsoft and Excel are registered trademarks of Microsoft Corporation in the United States and other countries.

² GoldSim is a registered trademark of GoldSim Technologies, Issaquah, Washington.

6 Calculation

The SIM-v2 modeling was conducted using the SIM-v1 based inputs (described in Section 4) for the sites with entrained solids (a total of 70 sites). The inventory mean, inventory standard deviation, cumulative mean, and cumulative standard deviation were generated for 29 chemicals and 46 radionuclides for each of the sites.

The output files from the SIMv2 (SIM_Analytic.gsm) modeling run are:

1. OPU_200_BC_1.xlsx
2. OPU_200_CB_1.xlsx
3. OPU_200_CP_1.xlsx
4. OPU_200_CR_1.xlsx
5. OPU_200_CW_1.xlsx
6. OPU_200_CW_3.xlsx
7. OPU_200_CW_5.xlsx
8. OPU_200_DV_1.xlsx
9. OPU_200_EA_1.xlsx
10. OPU_200_IS_1.xlsx
11. OPU_200_OA_1.xlsx
12. OPU_200_PW_1.xlsx
13. OPU_200_PW_3.xlsx
14. OPU_200_PW_6.xlsx
15. OPU_200_SW_2.xlsx
16. OPU_200_WA_1.xlsx
17. OPU_300_FF_1.xlsx
18. OPU_300_FF_2.xlsx
19. OPU_Not_accepted.xlsx
20. OPU_Proposed_not_accepted.xlsx
21. OPU_Rejected.xlsx
22. OPU_WMA A_AX.xlsx
23. OPU_WMA B_BX_BY.xlsx
24. OPU_WMA C.xlsx
25. OPU_WMA S_SX.xlsx
26. OPU_WMA T.xlsx
27. OPU_WMA TX_TY.xlsx
28. OPU_WMA U.xlsx

Each of the above output files contained radionuclide and chemical inventories for multiple waste sites. Then the above output files were compiled into one summary file (an Excel Workbook):

- SIMSolids.xlsx

7 Results/Conclusions

7.1 Chemical and Radionuclide Inventories in Entrained Solids

The mean of the cumulative inventories for 29 chemicals and 46 radionuclides for the entrained solids at the 70 sites were extracted and tabulated. Table 7-1 and Table 7-2 present the means and standard deviations, respectively, for the cumulative inventory of chemicals while Table 7-3 and Table 7-4 provide the means and standard deviations, respectively, for the cumulative inventory of radionuclide using SIM-v2 calculation methodology. The presented radionuclide inventories have been decay-corrected to January 1, 2001.

For purpose of illustration, results of SIM-v1 modeling from 2005 and SIM-v2 (SIM_Analytic.gsm) modeling for the entrained solids are compared and evaluated for site 216-T-4A. For SIM-v1, inventory results for site 216-T-4A were presented in the output file for the Operable Unit of Waste Management (WM) Zone (RPP-26744). For SIM-v2, site 216-T-4A is in the output file for OPU-200-SW-2 sheet 200_T_4A. To compare SIM-v1 and SIM-v2 results, it is necessary to consider only those analytes common to both calculations. This required deletion of analyte Fe (CN)₆ from the SIM-v1 list of analytes and deletion of Mg and OH from the list of SIM-v2 list of analytes. All remaining analytes are common to both SIM-v1 and SIM-v2.

Comparisons of mean values and standard deviations for chemicals (in kg) at site 216-T-4A are shown in Figure 7-1 and Figure 7-2, respectively, whereas comparisons of means and standard deviations for radionuclides (in Ci) are shown in Figure 7-3 and Figure 7-4, respectively, for the entrained solids inventory. The radionuclide results have been decay-corrected to January 1, 2001.

Comparisons between results of SIM-v1 and SIM-v2 for chemicals and radionuclides across all 70 sites were also performed, and the agreements between SIM-v1 outputs and SIM-v2 outputs for risk-driving chemicals (chromium, nitrate, and total uranium) and radionuclide (uranium-238) are demonstrated in Figure 7-5 through Figure 7-8. It can be seen that agreement between the SIM-v1 (a Monte Carlo simulation-based calculation approach) and SIM-v2 (analytic calculation approach) is very good for chemicals and radionuclides.

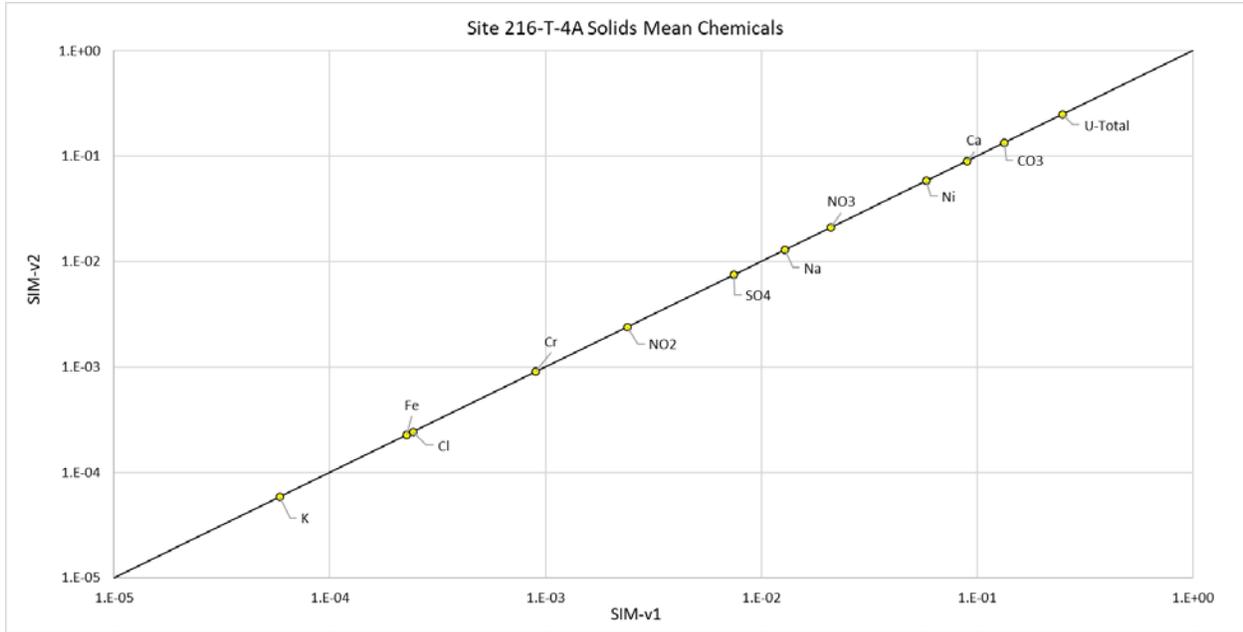


Figure 7-1. Comparison of Mean Estimate of Entrained Solids Inventory (kg) between SIM-v1 and SIM-v2 for Chemicals at Site 216-T-4A

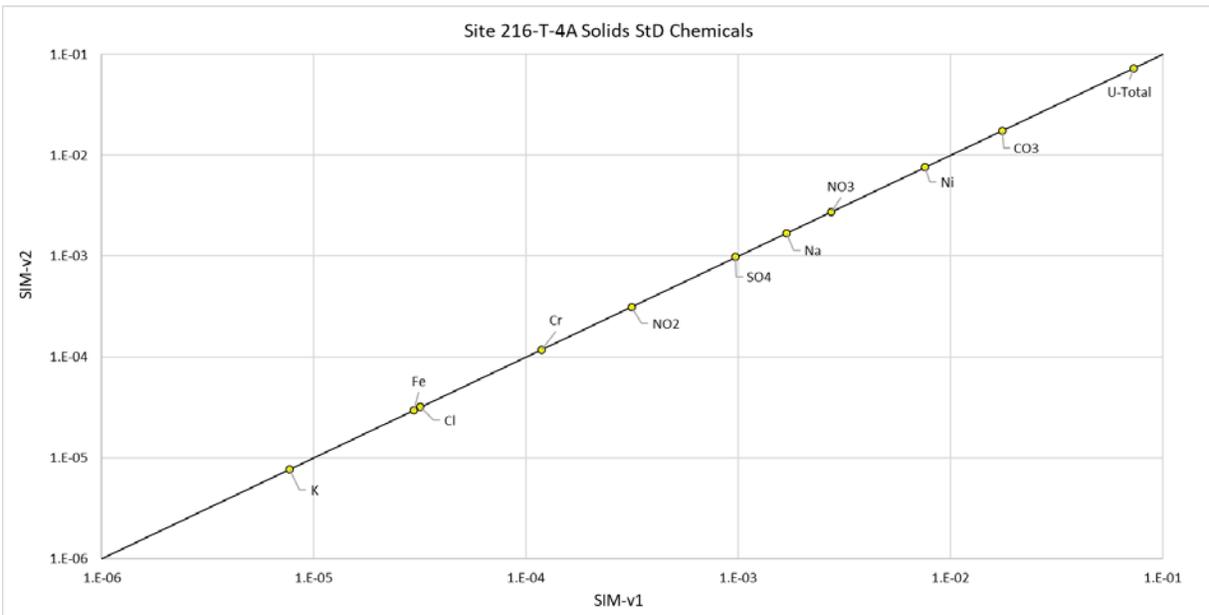


Figure 7-2. Comparison of Standard Deviation Estimate of Entrained Solids Inventory (kg) between SIM-v1 and SIM-v2 for Chemicals at Site 216-T-4A

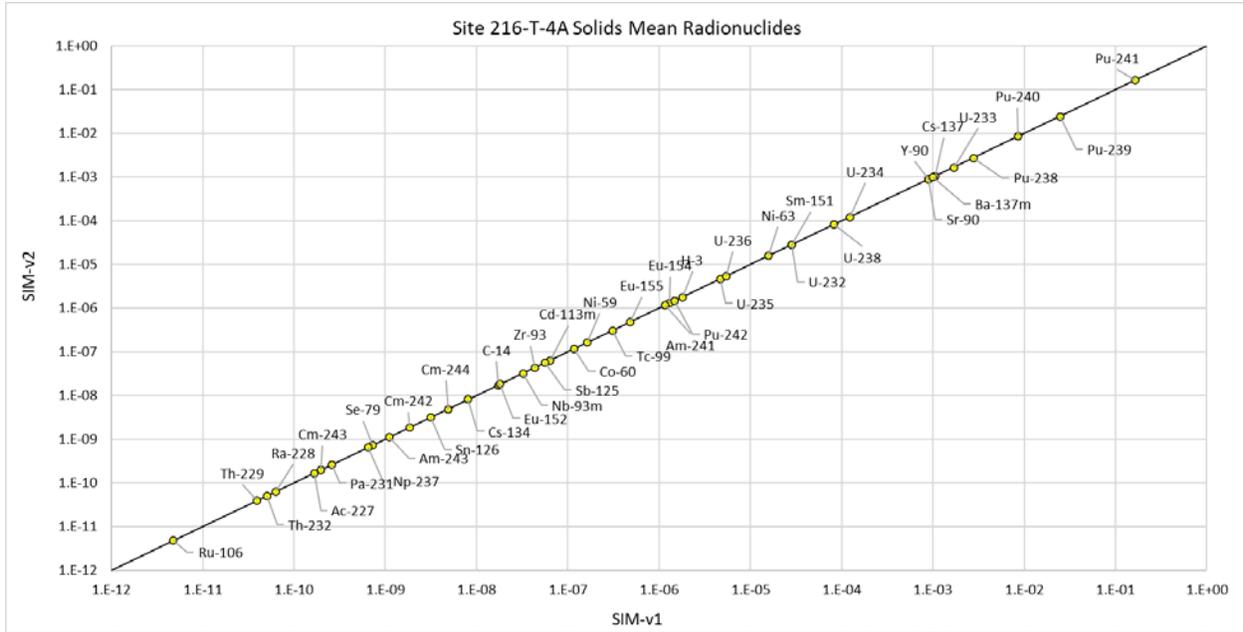


Figure 7-3. Comparison of Mean Estimate of Entrained Solids Inventory (Ci, Decayed to 1/1/2001) between SIM-v1 and SIM-v2 for Radionuclides at Site 216-T-4A

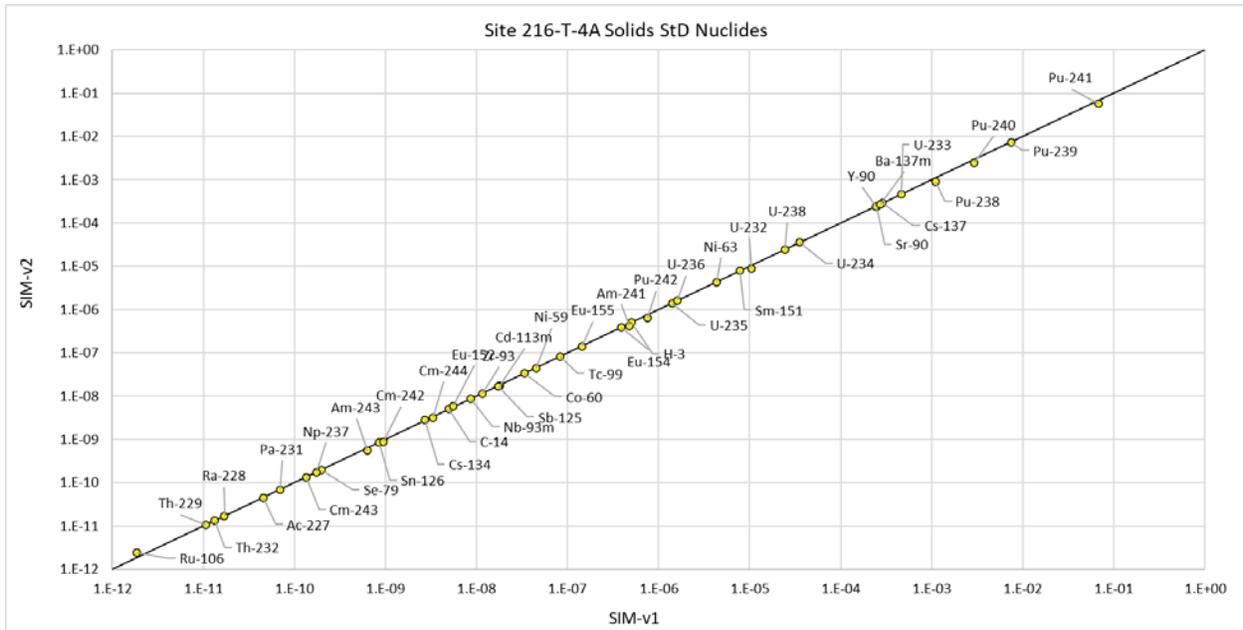


Figure 7-4. Comparison of Standard Deviation Estimate of Entrained Solids Inventory (Ci, Decayed to 1/1/2001) between SIM-v1 and SIM-v2 for Radionuclides at Site 216-T-4A

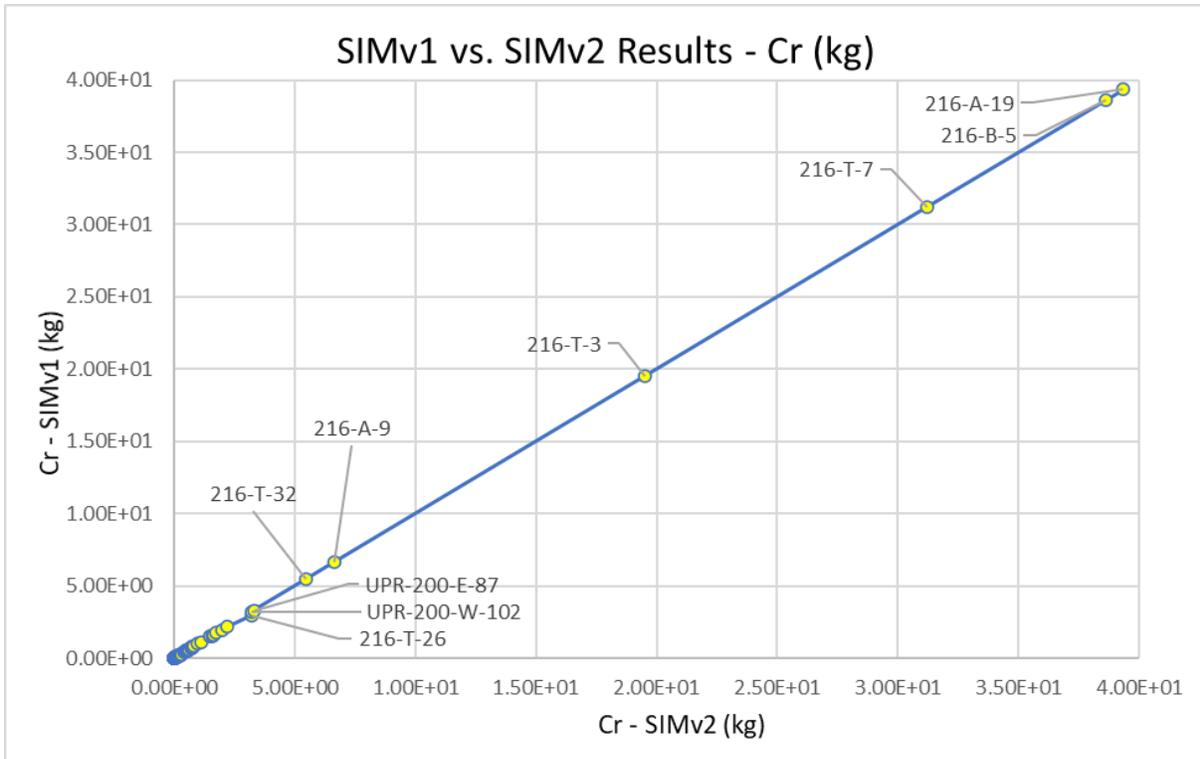


Figure 7-5. Comparison of Mean Estimate of Chromium Inventories in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2

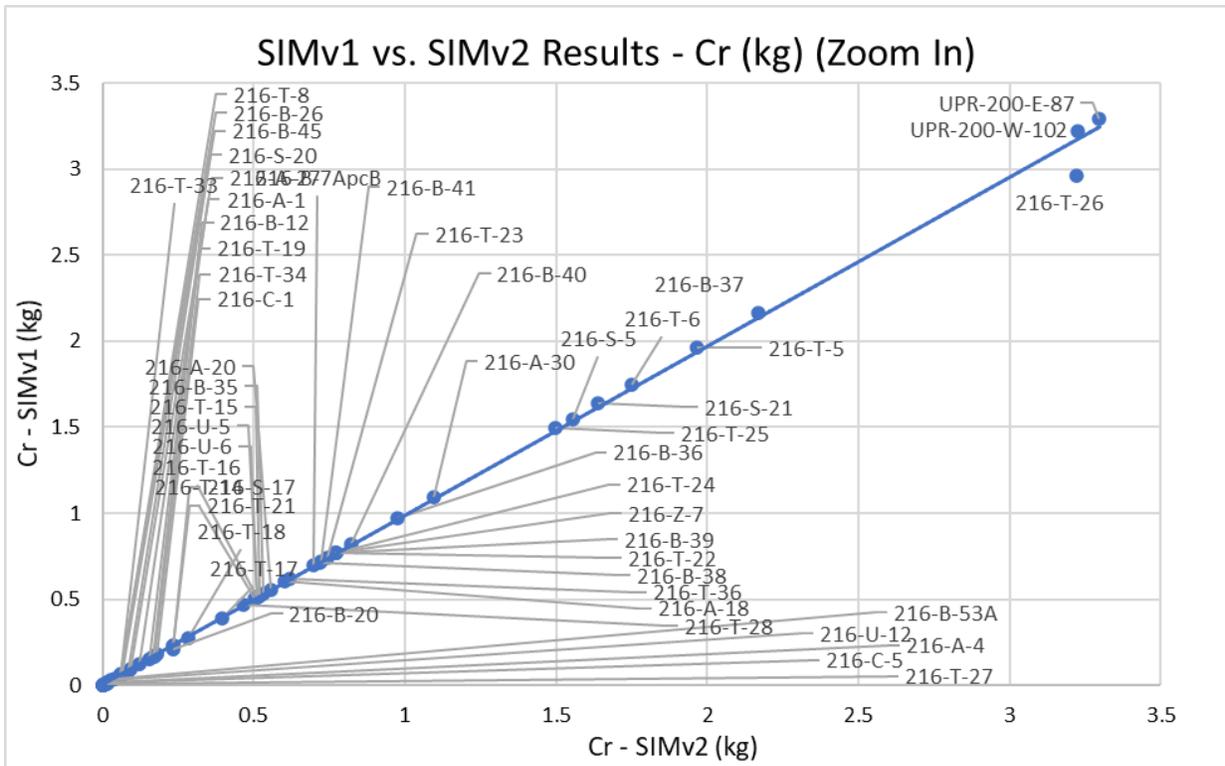


Figure 7 6. Comparison of Mean Estimate of Chromium Inventories in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2 (Zoom In)

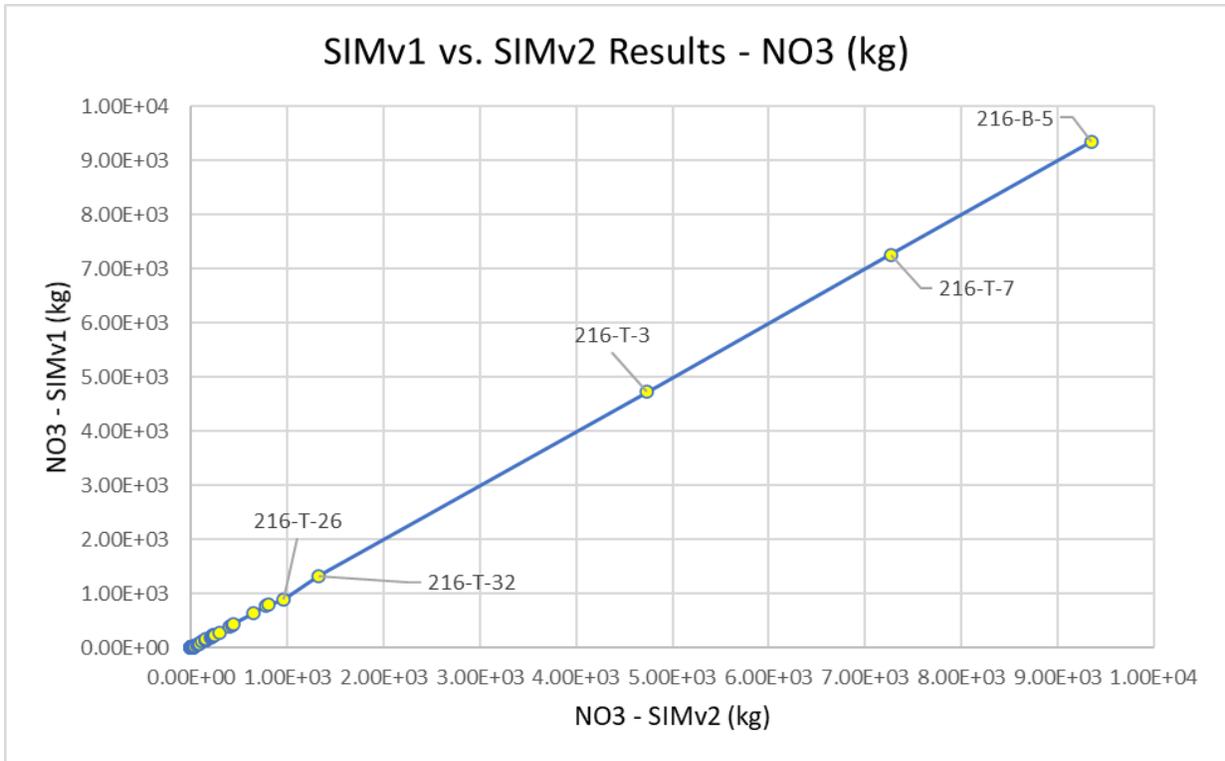


Figure 7-7. Comparison of Mean Estimate of Nitrate Inventories in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2

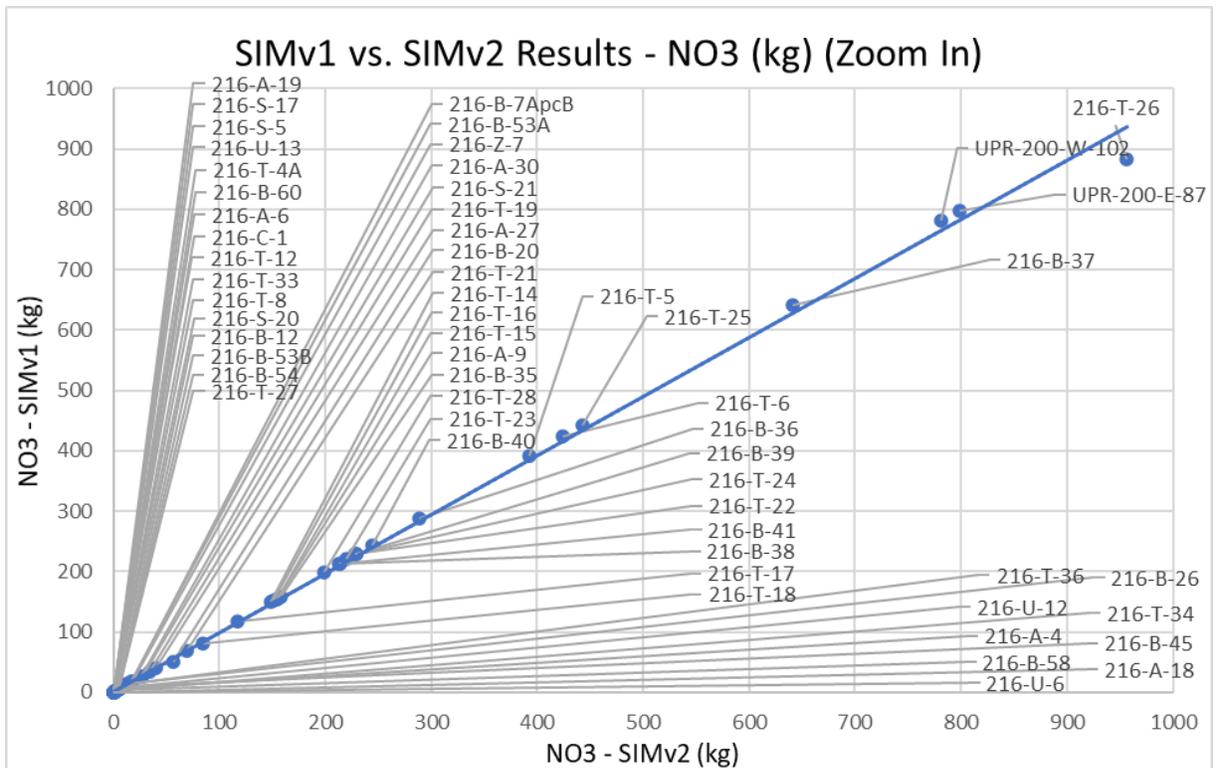


Figure 7-8. Comparison of Mean Estimate of Nitrate Inventories in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2 (Zoom In)

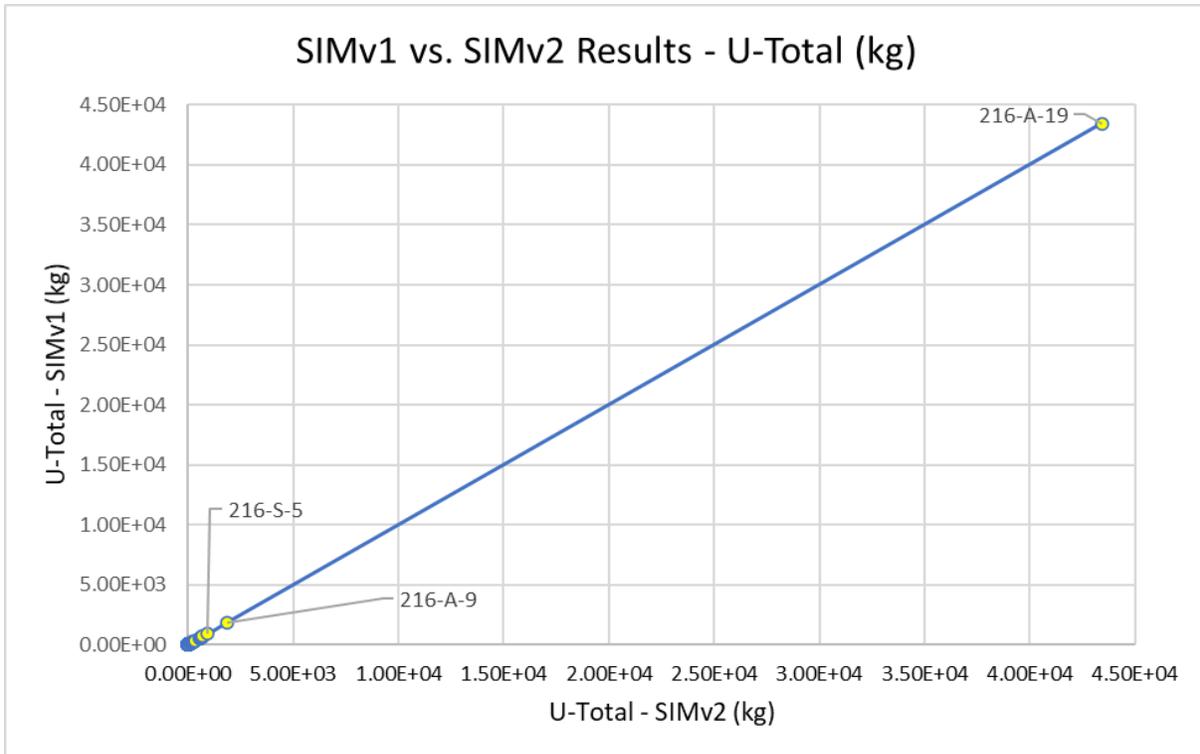


Figure 7-9. Comparison of Mean Estimate of Total Uranium Inventories in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2

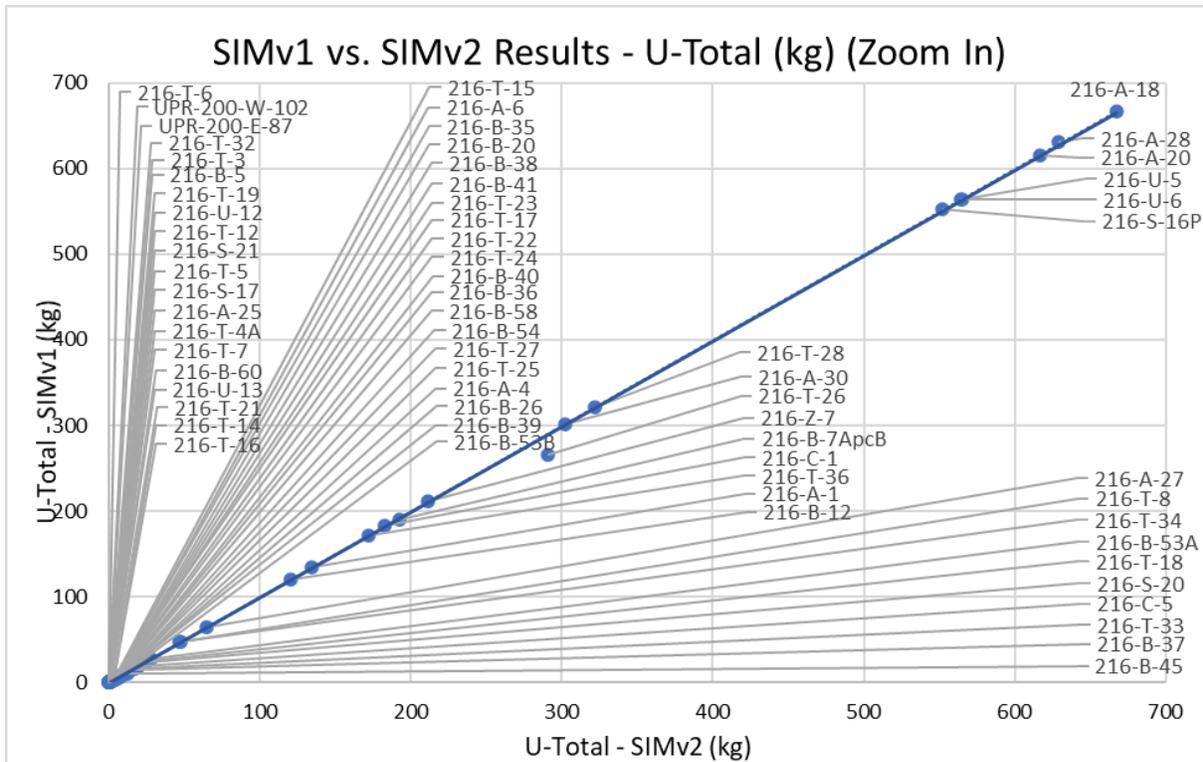


Figure 7-10. Comparison of Mean Estimate of Total Uranium Inventories in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2 (Zoom In)

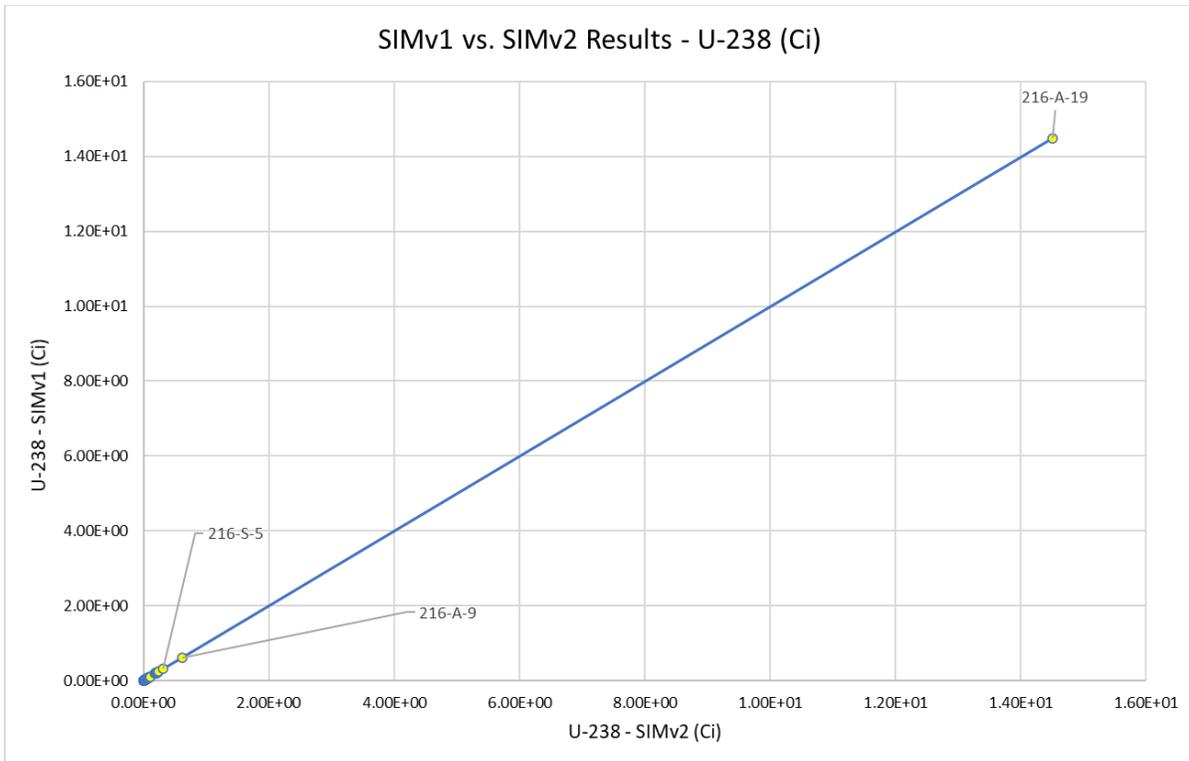


Figure 7-11. Comparison of Mean Estimate of Uranium-238 Inventories (Ci, Decayed to 1/1/2001) in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2

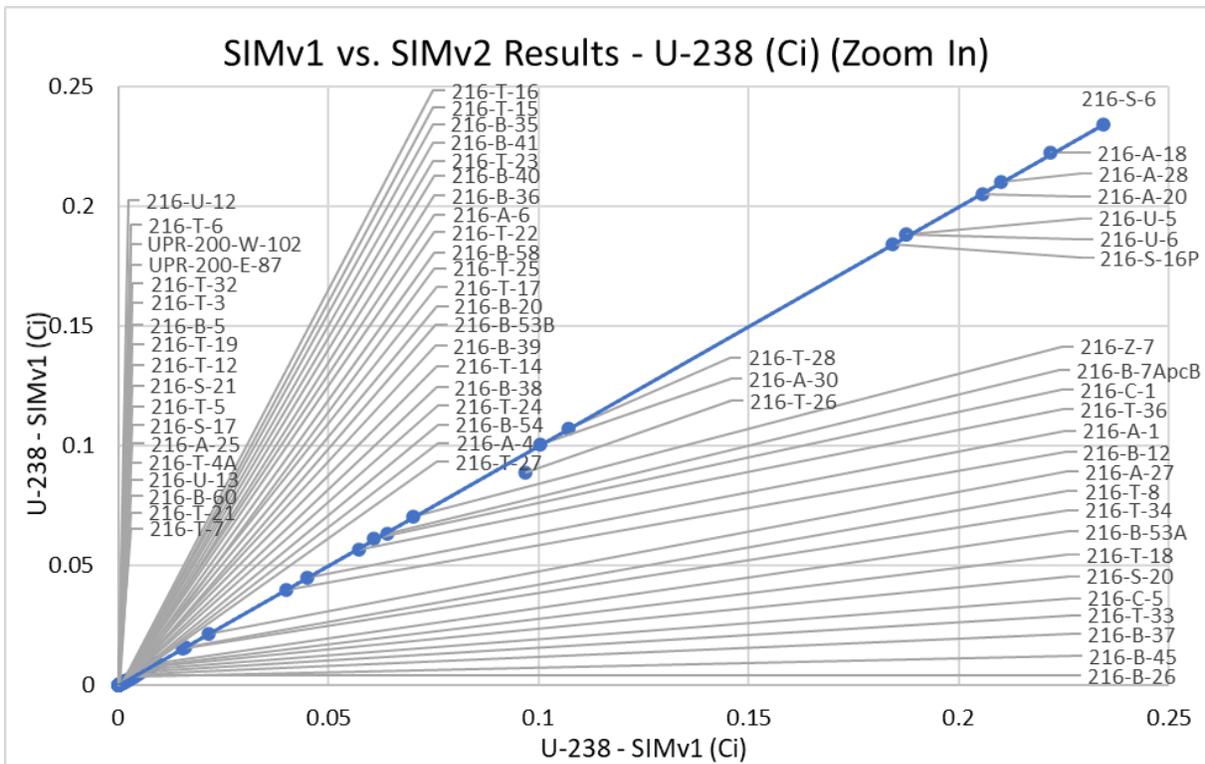


Figure 7-12. Comparison of Mean Estimate of Uranium-238 Inventories (Ci, Decayed to 1/1/2001) in Entrained Solids Among Waste Sites between SIM-v1 and SIM-v2 (Zoom In)

Table 7-1. Mean of Cumulative Inventory (kg) from the Entrained Solids for Chemicals (2 sheets)^a

| Site_ID | Site_Name | Na | Al | Fe | Cr | Bi | La | Hg | Zr | Pb | Ni | Ag | Mn | Mg | Ca | K | OH | NO3 | NO2 | CO3 | PO4 | SO4 | Si | F | Cl | CCl4 | Butanol | TBP | NPH | NH3 | U-Total |
|---------|--------------|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 108 | 216-B-20 | 208.9787985 | 8.97E-01 | 3.33E+01 | 2.08E-01 | 4.57E-02 | 0.00E+00 | 4.79E-02 | 5.14E-03 | 1.03E-03 | 2.41E+01 | 5.23E+00 | 0.00E+00 | 4.70E+01 | 3.04E+01 | 5.41E-01 | 4.99E+01 | 4.99E+01 | 8.18E+01 | 4.98E+01 | 9.32E+01 | 1.03E+02 | 1.06E+01 | 1.97E+00 | 2.63E+00 | 0.00E+00 | 1.03E-03 | 0.00E+00 | 0.00E+00 | 1.11E+00 | 4.75E+00 |
| 116 | 216-B-26 | 364.0004415 | 0.00E+00 | 6.66E+01 | 6.51E-02 | 1.47E-02 | 0.00E+00 | 1.24E-01 | 0.00E+00 | 0.00E+00 | 1.26E+01 | 1.36E+01 | 0.00E+00 | 2.63E+01 | 2.30E+01 | 2.53E-01 | 1.29E+01 | 1.29E+01 | 4.63E+01 | 3.45E+01 | 2.30E+02 | 2.46E+02 | 2.72E+01 | 1.56E+00 | 1.06E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.90E-01 | 1.23E+01 |
| 146 | 216-B-53A | 21.31573586 | 0.00E+00 | 2.80E+01 | 4.01E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.02E+00 | 9.08E-02 | 0.00E+00 | 0.00E+00 | 4.60E+00 | 5.55E-02 | 1.71E+01 | 1.71E+01 | 1.21E-01 | 6.89E+00 | 2.00E+01 | 5.19E-01 | 0.00E+00 | 0.00E+00 | 2.31E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.57E-06 | 2.77E+01 |
| 147 | 216-B-53B | 6.196434842 | 0.00E+00 | 8.14E+00 | 1.17E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.96E-01 | 2.64E-02 | 0.00E+00 | 0.00E+00 | 1.34E+00 | 1.61E-02 | 4.96E+00 | 4.96E+00 | 3.51E-02 | 2.00E+00 | 5.81E+00 | 1.51E-01 | 0.00E+00 | 0.00E+00 | 6.73E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.56E-07 | 8.04E+00 |
| 148 | 216-B-54 | 6.196434842 | 0.00E+00 | 8.14E+00 | 1.17E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.96E-01 | 2.64E-02 | 0.00E+00 | 0.00E+00 | 1.34E+00 | 1.61E-02 | 4.96E+00 | 4.96E+00 | 3.51E-02 | 2.00E+00 | 5.81E+00 | 1.51E-01 | 0.00E+00 | 0.00E+00 | 6.73E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.56E-07 | 8.04E+00 | |
| 151 | 216-B-58 | 4.957147874 | 0.00E+00 | 6.52E+00 | 9.34E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.37E-01 | 2.11E-02 | 0.00E+00 | 0.00E+00 | 1.07E+00 | 1.29E-02 | 3.97E+00 | 3.97E+00 | 2.81E-02 | 1.60E+00 | 4.65E+00 | 1.21E-01 | 0.00E+00 | 0.00E+00 | 5.38E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.65E-07 | 6.43E+00 | |
| 154 | 216-B-60 | 0.032945404 | 0.00E+00 | 5.79E-04 | 2.30E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.49E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.30E-01 | 1.49E-04 | 5.38E-02 | 5.38E-02 | 6.11E-03 | 3.42E-01 | 0.00E+00 | 1.91E-02 | 0.00E+00 | 0.00E+00 | 6.22E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.34E-01 |
| 330 | UPR-200-E-87 | 1396.523256 | 0.00E+00 | 4.41E+02 | 3.29E+00 | 6.47E+02 | 2.94E+02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.74E-01 | 0.00E+00 | 1.40E+02 | 0.00E+00 | 3.24E+02 | 1.07E+01 | 7.97E+02 | 7.97E+02 | 7.28E-04 | 4.85E+02 | 3.22E+02 | 2.68E+00 | 0.00E+00 | 4.77E+01 | 9.47E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.82E-12 | 1.88E-04 |
| 73 | 216-A-25 | 1.558833434 | 0.00E+00 | 1.66E+00 | 2.32E-03 | 0.00E+00 | 0.00E+00 | 1.26E-03 | 0.00E+00 | 1.34E-02 | 3.38E-02 | 4.47E-03 | 0.00E+00 | 0.00E+00 | 1.49E-01 | 1.23E-03 | 4.60E-19 | 4.60E-19 | 1.85E-01 | 2.24E-01 | 0.00E+00 | 9.99E-01 | 5.91E-01 | 0.00E+00 | 5.12E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.27E-02 | 1.25E-01 | |
| 184 | 216-S-16P | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.52E+02 |
| 185 | 216-S-17 | 0.307849693 | 6.40E-01 | 1.89E-01 | 2.32E-01 | 0.00E+00 | 0.00E+00 | 1.14E-04 | 0.00E+00 | 0.00E+00 | 9.83E-03 | 4.59E-04 | 2.17E-02 | 0.00E+00 | 4.43E-02 | 2.39E-03 | 1.65E-03 | 1.65E-03 | 3.17E-01 | 6.63E-02 | 0.00E+00 | 4.23E-03 | 9.69E-03 | 0.00E+00 | 7.75E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 9.57E-03 | 4.05E-02 | |
| 126 | 216-B-35 | 369.0117237 | 2.89E+01 | 4.68E+01 | 5.31E-01 | 4.20E+01 | 0.00E+00 | 3.58E-02 | 1.07E-01 | 0.00E+00 | 1.48E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.04E+01 | 5.84E-01 | 1.57E+02 | 1.57E+02 | 4.62E+00 | 1.56E+01 | 3.75E+02 | 1.05E+01 | 2.14E+01 | 5.56E+00 | 2.43E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.02E+00 | 3.49E+00 |
| 127 | 216-B-36 | 675.3610793 | 5.30E+01 | 8.56E+01 | 9.73E-01 | 7.68E+01 | 0.00E+00 | 6.56E-02 | 1.95E-01 | 0.00E+00 | 2.70E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.91E+01 | 1.07E+00 | 2.88E+02 | 2.88E+02 | 8.45E+00 | 2.85E+01 | 6.86E+02 | 1.92E+01 | 3.91E+01 | 1.02E+01 | 4.45E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.69E+00 | 6.39E+00 |
| 128 | 216-B-37 | 1503.896836 | 1.18E+02 | 1.91E+02 | 2.17E+00 | 1.71E+02 | 0.00E+00 | 1.46E-01 | 4.35E-01 | 0.00E+00 | 6.02E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.24E+01 | 2.38E+00 | 6.41E+02 | 6.41E+02 | 1.88E+01 | 6.35E+01 | 1.53E+03 | 4.28E+01 | 8.71E+01 | 2.26E+01 | 9.92E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.22E+00 | 1.42E+01 |
| 129 | 216-B-38 | 497.8177028 | 3.90E+01 | 6.31E+01 | 7.17E-01 | 5.66E+01 | 0.00E+00 | 4.83E-02 | 1.44E-01 | 0.00E+00 | 1.99E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.40E+01 | 7.88E-01 | 2.12E+02 | 2.12E+02 | 6.23E+00 | 2.10E+01 | 5.06E+02 | 1.42E+01 | 2.88E+01 | 7.50E+00 | 3.28E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.72E+00 | 4.71E+00 |
| 130 | 216-B-39 | 536.1113722 | 4.20E+01 | 6.79E+01 | 7.72E-01 | 6.10E+01 | 0.00E+00 | 5.21E-02 | 1.55E-01 | 0.00E+00 | 2.15E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.51E+01 | 8.48E-01 | 2.29E+02 | 2.29E+02 | 6.71E+00 | 2.26E+01 | 5.45E+02 | 1.53E+01 | 3.10E+01 | 8.07E+00 | 3.54E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.93E+00 | 5.07E+00 |
| 132 | 216-B-40 | 570.923799 | 4.48E+01 | 7.23E+01 | 8.22E-01 | 6.49E+01 | 0.00E+00 | 5.54E-02 | 1.65E-01 | 0.00E+00 | 2.28E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.61E+01 | 9.03E-01 | 2.43E+02 | 2.43E+02 | 7.14E+00 | 2.41E+01 | 5.80E+02 | 1.63E+01 | 3.31E+01 | 8.60E+00 | 3.77E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.12E+00 | 5.40E+00 |
| 133 | 216-B-41 | 501.2989454 | 3.93E+01 | 6.35E+01 | 7.22E-01 | 5.70E+01 | 0.00E+00 | 4.87E-02 | 1.45E-01 | 0.00E+00 | 2.01E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.41E+01 | 7.93E-01 | 2.14E+02 | 2.14E+02 | 6.27E+00 | 2.12E+01 | 5.09E+02 | 1.43E+01 | 2.90E+01 | 7.55E+00 | 3.31E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.74E+00 | 4.74E+00 |
| 137 | 216-B-45 | 326.5957269 | 0.00E+00 | 6.37E+01 | 5.87E-02 | 1.33E-02 | 0.00E+00 | 1.10E-01 | 0.00E+00 | 0.00E+00 | 1.25E+01 | 7.38E-03 | 0.00E+00 | 4.65E+01 | 2.04E+01 | 2.28E-01 | 1.01E+01 | 1.01E+01 | 4.28E+01 | 3.05E+01 | 2.04E+02 | 2.17E+02 | 2.40E+01 | 1.41E+00 | 9.51E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.89E-01 | 1.09E+01 |
| 142 | 216-B-5 | 16396.10703 | 0.00E+00 | 5.18E+03 | 3.86E+01 | 7.60E+03 | 3.46E+03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.03E+01 | 0.00E+00 | 1.64E+03 | 0.00E+00 | 3.80E+03 | 9.88E+02 | 9.36E+03 | 9.36E+03 | 8.54E+03 | 5.69E+03 | 3.79E+03 | 3.15E+01 | 0.00E+00 | 5.60E+02 | 1.11E+02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.49E-11 | 2.21E-03 |
| 157 | 216-B-7A&B | 10.1153665 | 0.00E+00 | 7.51E-01 | 6.99E-01 | 0.00E+00 | 0.00E+00 | 6.86E-03 | 0.00E+00 | 1.18E-01 | 4.44E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.88E+01 | 6.28E-02 | 1.63E+01 | 1.63E+01 | 1.94E+00 | 1.02E+02 | 0.00E+00 | 5.74E+00 | 0.00E+00 | 0.00E+00 | 1.95E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.64E-04 | 1.90E+02 | |
| 188 | 216-S-21 | 22.31818286 | 5.74E+00 | 7.27E-02 | 1.64E+00 | 3.22E-06 | 0.00E+00 | 1.88E-04 | 4.35E-07 | 1.26E-03 | 7.13E-02 | 3.57E-05 | 5.52E-03 | 0.00E+00 | 9.93E-02 | 1.05E-01 | 2.67E+01 | 2.67E+01 | 5.48E+00 | 2.14E-01 | 2.72E-03 | 2.80E-01 | 1.81E-01 | 2.10E-04 | 3.72E-01 | 0.00E+00 | 5.16E-03 | 0.00E+00 | 0.00E+00 | 3.89E-02 | 2.02E-02 |
| 202 | 216-T-14 | 350.2130133 | 2.75E+01 | 4.44E+01 | 5.04E-01 | 3.98E+01 | 0.00E+00 | 3.40E-02 | 1.01E-01 | 0.00E+00 | 1.40E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 9.88E+00 | 5.54E-01 | 1.49E+02 | 1.49E+02 | 4.38E+00 | 1.48E+01 | 3.56E+02 | 9.98E+00 | 2.03E+01 | 5.27E+00 | 2.31E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.91E+00 | 3.31E+00 |
| 203 | 216-T-15 | 362.7454869 | 2.85E+01 | 4.60E+01 | 5.22E-01 | 4.13E+01 | 0.00E+00 | 3.52E-02 | 1.05E-01 | 0.00E+00 | 1.45E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.02E+01 | 5.74E-01 | 1.55E+02 | 1.55E+02 | 4.54E+00 | 1.53E+01 | 3.69E+02 | 1.03E+01 | 2.10E+01 | 5.46E+00 | 2.39E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.98E+00 | 3.43E+00 |
| 204 | 216-T-16 | 355.086753 | 2.79E+01 | 4.50E+01 | 5.11E-01 | 4.04E+01 | 0.00E+00 | 3.45E-02 | 1.03E-01 | 0.00E+00 | 1.42E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.00E+01 | 5.62E-01 | 1.51E+02 | 1.51E+02 | 4.44E+00 | 1.50E+01 | 3.61E+02 | 1.01E+01 | 2.06E+01 | 5.35E+00 | 2.34E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.94E+00 | 3.36E+00 |
| 205 | 216-T-17 | 273.2775501 | 2.14E+01 | 3.46E+01 | 3.94E-01 | 3.11E+01 | 0.00E+00 | 2.65E-02 | 7.90E-02 | 0.00E+00 | 1.09E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.71E+00 | 4.32E-01 | 1.17E+02 | 1.17E+02 | 3.42E+00 | 1.15E+01 | 2.78E+02 | 7.78E+00 | 1.58E+01 | 4.11E+00 | 1.80E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.49E+00 | 2.58E+00 |
| 206 | 216-T-18 | 239.2537 | 0.00E+00 | 2.91E+01 | 2.74E-01 | 2.91E+02 | 0.00E+00 | 3.45E-01 | 3.49E+01 | 0.00E+00 | 6.41E+01 | 0.00E+00 | 0.00E+00 | 1.39E+02 | 6.75E+01 | 4.33E-01 | 8.17E+01 | 8.17E+01 | 2.60E+01 | 1.01E+02 | 1.58E+02 | 5.41E+00 | 8.03E+01 | 1.14E+01 | 1.81E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.00E-02 | 2.47E+01 |
| 207 | 216-T-19 | 158.2876051 | 0.00E+00 | 2.88E+01 | 1.69E-01 | 2.70E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.12E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.92E+00 | 1.16E-01 | 3.37E+01 | 3.37E+01 | 3.17E-03 | 1.19E+01 | 1.84E+02 | 2.09E+00 | 1.03E+01 | 1.83E+00 | 4.85E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.02E-10 | 3.38E-03 |
| 210 | 216-T-21 | 161.1815359 | 1.26E+01 | 2.04E+01 | 2.32E-01 | 1.83E+01 | 0.00E+00 | 1.56E-02 | 4.66E-02 | 0.00E+00 | 6.45E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.55E+00 | 2.55E-01 | 6.87E+01 | 6.87E+01 | 2.02E+00 | 6.81E+00 | 1.64E+02 | 4.45E+00 | 9.33E+00 | 2.43E+00 | 1.06E+00 | | | | | | |

ECF-HANFORD-20-0072, REV. 0

| Site_ID | Site_Name | Na | Al | Fe | Cr | Bi | La | Hg | Zr | Pb | Ni | Ag | Mn | Mg | Ca | K | OH | NO3 | NO2 | CO3 | PO4 | SO4 | Si | F | Cl | CCl4 | Butanol | TBP | NPH | NH3 | U-Total |
|---------|-----------|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 229 | 216-T-8 | 0.871603951 | 0.00E+00 | 1.53E-02 | 6.09E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.93E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.09E+00 | 3.95E-03 | 1.42E+00 | 1.42E+00 | 1.62E-01 | 9.05E+00 | 0.00E+00 | 5.05E-01 | 0.00E+00 | 0.00E+00 | 1.65E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.75E+01 |
| 232 | 216-U-12 | 7.50574402 | 1.48E+00 | 4.91E+00 | 2.85E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.86E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.24E-01 | 7.46E-02 | 7.53E+00 | 7.53E+00 | 3.14E+00 | 1.23E+00 | 3.09E+00 | 3.56E-01 | 0.00E+00 | 1.56E-01 | 1.54E-01 | 0.00E+00 | 2.00E-02 | 0.00E+00 | 0.00E+00 | 1.54E-02 | 9.63E-03 |
| 233 | 216-U-13 | 0.009904036 | 0.00E+00 | 1.74E-04 | 6.92E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.47E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.92E-02 | 4.49E-05 | 1.62E-02 | 1.62E-02 | 1.84E-03 | 1.03E-01 | 0.00E+00 | 5.73E-03 | 0.00E+00 | 0.00E+00 | 1.87E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.40E-01 |
| 241 | 216-U-5 | 142.8396827 | 0.00E+00 | 2.37E+02 | 5.11E-01 | 0.00E+00 | 0.00E+00 | 3.58E-01 | 0.00E+00 | 2.84E-02 | 9.52E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.22E+01 | 1.51E-01 | 6.46E-15 | 6.46E-15 | 2.54E+01 | 6.32E+01 | 0.00E+00 | 5.16E+00 | 7.53E+01 | 0.00E+00 | 6.28E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.07E+00 | 5.64E+02 |
| 242 | 216-U-6 | 142.8396827 | 0.00E+00 | 2.37E+02 | 5.11E-01 | 0.00E+00 | 0.00E+00 | 3.58E-01 | 0.00E+00 | 2.84E-02 | 9.52E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.22E+01 | 1.51E-01 | 6.46E-15 | 6.46E-15 | 2.54E+01 | 6.32E+01 | 0.00E+00 | 5.16E+00 | 7.53E+01 | 0.00E+00 | 6.28E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.07E+00 | 5.64E+02 |
| 265 | 216-Z-7 | 11.0166642 | 0.00E+00 | 1.94E-01 | 7.70E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.97E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.69E+01 | 4.99E-02 | 1.80E+01 | 1.80E+01 | 2.04E+00 | 1.14E+02 | 0.00E+00 | 6.38E+00 | 0.00E+00 | 0.00E+00 | 2.08E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.12E+02 |

* - The 241-BX-102 results were removed from the SIM Solids output, and they were allocated to the liquids only.

Table 7-2. Standard Deviations of Cumulative Inventory (kg) for the Entrained Solids for Chemicals (2 sheets)^a

| Site_ID | Site_Name | Na | Al | Fe | Cr | Bi | La | Hg | Zr | Pb | Ni | Ag | Mn | Mg | Ca | K | OH | NO3 | NO2 | CO3 | PO4 | SO4 | Si | F | Cl | CCl4 | Butanol | TBP | NPH | NH3 | U-Total |
|---------|--------------|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 108 | 216-B-20 | 160.3620661 | 9.21E-01 | 2.75E+01 | 1.90E-01 | 4.15E-02 | 0.00E+00 | 4.90E-02 | 5.28E-03 | 1.05E-03 | 2.04E+01 | 5.37E+00 | 0.00E+00 | 3.92E+01 | 2.39E+01 | 4.66E-01 | 4.64E+01 | 4.64E+01 | 6.82E+01 | 3.99E+01 | 9.12E+01 | 9.76E+01 | 1.08E+01 | 1.53E+00 | 2.32E+00 | 0.00E+00 | 1.06E-03 | 0.00E+00 | 0.00E+00 | 1.07E+00 | 5.55E+00 |
| 116 | 216-B-26 | 266.8075607 | 0.00E+00 | 4.88E+01 | 4.77E-02 | 1.08E-02 | 0.00E+00 | 9.07E-02 | 0.00E+00 | 0.00E+00 | 9.23E+00 | 9.95E+00 | 0.00E+00 | 1.93E+01 | 1.69E+01 | 1.86E-01 | 9.48E+00 | 9.48E+00 | 3.40E+01 | 2.53E+01 | 1.69E+02 | 1.80E+02 | 1.99E+01 | 1.14E+00 | 7.73E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.40E-01 | 1.03E+01 |
| 146 | 216-B-53A | 9.192177046 | 0.00E+00 | 1.21E+01 | 1.73E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.39E-01 | 1.20E-01 | 0.00E+00 | 0.00E+00 | 1.98E+00 | 2.39E-02 | 7.36E+00 | 7.36E+00 | 5.21E-02 | 2.97E+00 | 8.62E+00 | 2.24E-01 | 0.00E+00 | 0.00E+00 | 9.98E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.77E-07 | 2.81E+01 | |
| 147 | 216-B-53B | 2.67214449 | 0.00E+00 | 3.51E+00 | 5.03E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.28E-01 | 3.50E-02 | 0.00E+00 | 0.00E+00 | 5.77E-01 | 6.96E-03 | 2.14E+00 | 2.14E+00 | 1.52E-02 | 8.64E-01 | 2.51E+00 | 6.51E-02 | 0.00E+00 | 0.00E+00 | 2.90E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.97E-07 | 8.17E+00 | |
| 148 | 216-B-54 | 2.67214449 | 0.00E+00 | 3.51E+00 | 5.03E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.28E-01 | 3.50E-02 | 0.00E+00 | 0.00E+00 | 5.77E-01 | 6.96E-03 | 2.14E+00 | 2.14E+00 | 1.52E-02 | 8.64E-01 | 2.51E+00 | 6.51E-02 | 0.00E+00 | 0.00E+00 | 2.90E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.97E-07 | 8.17E+00 | |
| 151 | 216-B-58 | 2.137715592 | 0.00E+00 | 2.81E+00 | 4.03E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.02E-01 | 2.80E-02 | 0.00E+00 | 0.00E+00 | 4.61E-01 | 5.57E-03 | 1.71E+00 | 1.71E+00 | 1.21E-02 | 6.91E-01 | 2.00E+00 | 5.21E-02 | 0.00E+00 | 0.00E+00 | 2.32E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.57E-07 | 6.53E+00 | |
| 154 | 216-B-60 | 0.027151402 | 0.00E+00 | 4.77E-04 | 1.90E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.22E-01 | 1.12E-01 | 0.00E+00 | 0.00E+00 | 1.90E-01 | 1.23E-04 | 4.43E-02 | 4.43E-02 | 5.04E-03 | 2.82E-01 | 0.00E+00 | 1.17E-02 | 0.00E+00 | 0.00E+00 | 5.13E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.04E+00 | |
| 330 | UPR-200-E-87 | 1373.611229 | 0.00E+00 | 4.39E+02 | 3.23E+00 | 6.46E+02 | 2.90E+02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.80E-01 | 0.00E+00 | 1.37E+02 | 0.00E+00 | 3.19E+02 | 8.27E+01 | 7.84E+02 | 7.84E+02 | 7.16E-04 | 4.77E+02 | 3.17E+02 | 2.64E+00 | 0.00E+00 | 4.69E+01 | 9.32E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.76E-12 | 2.12E-04 | |
| 73 | 216-A-25 | 0.715595327 | 0.00E+00 | 7.60E-01 | 1.06E-03 | 0.00E+00 | 0.00E+00 | 5.77E-04 | 0.00E+00 | 6.14E-03 | 1.55E-02 | 5.57E-03 | 0.00E+00 | 0.00E+00 | 6.85E-02 | 5.63E-04 | 2.11E-19 | 2.11E-19 | 8.49E-02 | 1.03E-01 | 0.00E+00 | 4.59E-01 | 2.71E-01 | 0.00E+00 | 2.35E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.04E-02 | 2.21E-01 | |
| 184 | 216-S-16P | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.53E+02 |
| 185 | 216-S-17 | 0.202302363 | 0.00E-01 | 1.24E-01 | 1.52E-01 | 0.00E+00 | 0.00E+00 | 7.48E-05 | 0.00E+00 | 0.00E+00 | 6.46E-03 | 5.77E-04 | 1.43E-02 | 0.00E+00 | 2.91E-02 | 1.57E-03 | 1.08E-03 | 1.08E-03 | 0.00E+00 | 6.29E-03 | 3.86E-02 |
| 126 | 216-B-35 | 287.7531191 | 2.26E+01 | 3.65E+01 | 4.14E-01 | 3.27E+01 | 0.00E+00 | 2.79E-02 | 8.32E-02 | 0.00E+00 | 1.15E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.12E+00 | 4.55E-01 | 1.23E+02 | 1.23E+02 | 3.60E+00 | 1.22E+01 | 2.92E+02 | 8.20E+00 | 1.67E+01 | 4.33E+00 | 1.90E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.57E+00 | 4.07E+00 |
| 127 | 216-B-36 | 526.642501 | 4.13E+01 | 6.67E+01 | 7.58E-01 | 5.99E+01 | 0.00E+00 | 5.11E-02 | 1.52E-01 | 0.00E+00 | 2.11E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.49E+01 | 8.33E-01 | 2.25E+02 | 2.25E+02 | 6.59E+00 | 2.22E+01 | 5.35E+02 | 1.50E+01 | 3.05E+01 | 7.93E+00 | 3.47E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.88E+00 | 7.44E+00 | |
| 128 | 216-B-37 | 1172.729693 | 9.20E+01 | 1.49E+02 | 1.69E+00 | 1.33E+02 | 0.00E+00 | 1.14E-01 | 3.39E-01 | 0.00E+00 | 4.69E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.31E+01 | 1.86E+00 | 5.00E+02 | 5.00E+02 | 1.47E+01 | 4.95E+01 | 1.19E+03 | 3.34E+01 | 6.79E+01 | 1.77E+01 | 7.74E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.41E+00 | 1.66E+01 | |
| 129 | 216-B-38 | 388.1952456 | 3.04E+01 | 4.92E+01 | 5.59E-01 | 4.41E+01 | 0.00E+00 | 4.92E-01 | 1.12E-01 | 0.00E+00 | 1.55E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.10E+01 | 6.14E-01 | 1.66E+02 | 1.66E+02 | 4.86E+00 | 1.64E+01 | 3.94E+01 | 1.11E+01 | 2.25E+01 | 5.84E+00 | 2.56E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.12E+00 | 5.48E+00 | |
| 130 | 216-B-39 | 295.6354565 | 2.32E+01 | 3.75E+01 | 4.26E-01 | 3.36E+01 | 0.00E+00 | 2.87E-02 | 8.55E-02 | 0.00E+00 | 1.18E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.34E+00 | 4.68E-01 | 1.26E+02 | 1.26E+02 | 3.70E+00 | 1.25E+01 | 3.00E+02 | 8.42E+00 | 1.71E+01 | 4.45E+00 | 1.95E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.62E+00 | 4.18E+00 | |
| 132 | 216-B-40 | 445.202939 | 3.49E+01 | 5.64E+01 | 6.41E-01 | 5.06E+01 | 0.00E+00 | 4.32E-02 | 1.29E-01 | 0.00E+00 | 1.78E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.26E+01 | 7.05E-01 | 1.90E+02 | 1.90E+02 | 5.57E+00 | 1.88E+01 | 4.52E+02 | 1.27E+01 | 2.58E+01 | 6.70E+00 | 2.94E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.43E+00 | 6.29E+00 | |
| 133 | 216-B-41 | 390.9098977 | 3.07E+01 | 4.95E+01 | 5.63E-01 | 4.45E+01 | 0.00E+00 | 3.80E-02 | 1.13E-01 | 0.00E+00 | 1.56E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.10E+01 | 6.19E-01 | 1.67E+02 | 1.67E+02 | 4.89E+00 | 1.65E+01 | 3.97E+02 | 1.11E+01 | 2.26E+01 | 5.89E+00 | 2.58E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.14E+00 | 5.52E+00 | |
| 137 | 216-B-45 | 335.2863265 | 4.00E+00 | 6.54E+01 | 6.54E-02 | 1.36E-02 | 0.00E+00 | 1.12E-01 | 0.00E+00 | 0.00E+00 | 1.28E+01 | 7.58E-03 | 0.00E+00 | 4.77E+01 | 2.09E+01 | 2.34E-01 | 1.04E+01 | 1.04E+01 | 4.39E+01 | 3.36E+01 | 2.09E+02 | 2.23E+02 | 2.47E+01 | 1.44E+00 | 9.76E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.94E-01 | 9.60E+00 |
| 142 | 216-B-5 | 4463.484148 | 0.00E+00 | 1.51E+03 | 1.05E+01 | 2.29E+03 | 9.41E+02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.25E+00 | 0.00E+00 | 4.46E+02 | 0.00E+00 | 1.04E+03 | 2.69E+02 | 2.55E+03 | 2.55E+03 | 2.33E-03 | 1.55E+03 | 1.03E+03 | 8.57E+00 | 0.00E+00 | 1.52E+02 | 3.03E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.22E-11 | 1.07E-03 | |
| 157 | 216-B-7A&B | 6.842727879 | 0.00E+00 | 6.64E-01 | 4.78E-01 | 0.00E+00 | 0.00E+00 | 7.76E-03 | 0.00E+00 | 1.34E-01 | 3.08E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.77E+01 | 3.72E-02 | 1.12E+01 | 1.12E+01 | 1.27E+00 | 7.10E+01 | 0.00E+00 | 3.96E+00 | 0.00E+00 | 0.00E+00 | 1.30E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.11E-04 | 2.62E+02 | |
| 188 | 216-S-21 | 17.87488653 | 4.60E+00 | 5.82E-02 | 1.31E+00 | 2.58E-06 | 0.00E+00 | 1.51E-04 | 3.48E-07 | 1.01E-03 | 5.71E-02 | 3.00E-05 | 4.42E-03 | 0.00E+00 | 7.96E-02 | 8.40E-02 | 2.14E+01 | 2.14E+01 | 4.39E+00 | 1.71E-01 | 2.18E-03 | 2.24E-01 | 1.45E-01 | 1.68E-04 | 2.98E-01 | 0.00E+00 | 4.14E-03 | 0.00E+00 | 0.00E+00 | 3.12E-02 | 3.00E-02 |
| 202 | 216-T-14 | 273.093998 | 3.14E+01 | 3.46E+01 | 3.93E-01 | 3.11E+01 | 0.00E+00 | 2.65E-02 | 7.89E-02 | 0.00E+00 | 1.09E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.70E+00 | 4.32E-01 | 1.16E+02 | 1.16E+02 | 3.42E+00 | 1.15E+01 | 2.77E+02 | 7.78E+00 | 1.58E+01 | 4.11E+00 | 1.80E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.49E+00 | 3.86E+00 |
| 203 | 216-T-15 | 282.8667454 | 2.22E+01 | 3.58E+01 | 4.07E-01 | 3.22E+01 | 0.00E+00 | 2.75E-02 | 8.18E-02 | 0.00E+00 | 1.13E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.98E+00 | 4.48E-01 | 1.21E+02 | 1.21E+02 | 3.54E+00 | 1.19E+01 | 2.87E+02 | 8.06E+00 | 1.64E+01 | 4.26E+00 | 1.87E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.55E+00 | 4.00E+00 | |
| 204 | 216-T-16 | 276.8945108 | 2.17E+01 | 3.51E+01 | 3.99E-01 | 3.15E+01 | 0.00E+00 | 2.69E-02 | 8.00E-02 | 0.00E+00 | 1.11E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.81E+00 | 4.38E-01 | 1.18E+02 | 1.18E+02 | 3.46E+00 | 1.17E+01 | 2.81E+02 | 7.89E+00 | 1.60E+01 | 4.17E+00 | 1.83E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.51E+00 | 3.91E+00 | |
| 205 | 216-T-17 | 213.1001873 | 1.67E+01 | 2.70E+01 | 3.07E-01 | 2.42E+01 | 0.00E+00 | 2.07E-02 | 6.16E-02 | 0.00E+00 | 8.53E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.01E+00 | 3.37E-01 | 9.09E+01 | 9.09E+01 | 2.67E+00 | 9.00E+00 | 2.16E+02 | 6.07E+00 | 1.23E+01 | 3.21E+00 | 1.41E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.16E+00 | 3.01E+00 | |
| 206 | 216-T-18 | 243.6523053 | 0.00E+00 | 2.96E+01 | 2.79E-01 | 2.97E+02 | 0.00E+00 | 3.52E-01 | 3.55E+01 | 0.00E+00 | 6.53E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.42E+02 | 6.87E+01 | 4.41E-01 | 8.32E+01 | 1.16E+02 | 2.65E+01 | 1.03E+02 | 1.61E+02 | 5.51E+00 | 8.17E+01 | 1.16E+01 | 1.84E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.03E-02 | 2.87E+01 |
| 207 | 216-T-19 | 116.6973992 | 0.00E+00 | 2.12E+01 | 1.24E-01 | 1.99E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.04E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.84E+00 | 8.58E-02 | 2.49E+01 | 2.49E+01 | 2.34E-03 | 8.75E+00 | 1.36E+02 | 1.54E+00 | 7.58E+00 | 1.35E+00 | 3.58E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.17E-10 | 3.97E-03 | |
| 210 | 216-T-21 | 125.6883907 | 9.86E+00 | 1.59E+01 | 1.81E-01 | 1.43E+01 | 0.00E+00 | 1.22E-02 | 3.63E-02 | 0.00E+00 | 5.03E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.55E+00 | 1.99E-01 | 5.36E+01 | 5.36E+01 | 1.57E+00 | 5.31E+00 | 1.28E+02 | 3.58E+00 | 7.28E+00 | 1.89E+00 | 8.29E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.87E-01 | 1.78E+00 | |
| 211 | 216-T-22 | 418.0564183 | 3.28E+01 | 5.30E+01 | 6.02E-01 | 4.75E+01 | 0.00E+00 | 4.06 | | | | | | | | | | | | | | | | | | | | | | | |

ECF-HANFORD-20-0072, REV. 0

| Site_ID | Site_Name | Na | Al | Fe | Cr | Bi | La | Hg | Zr | Pb | Ni | Ag | Mn | Mg | Ca | K | OH | NO3 | NO2 | CO3 | PO4 | SO4 | Si | F | Cl | CCl4 | Butanol | TBP | NPH | NH3 | U-Total |
|---------|-----------|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 224 | 216-T-36 | 5.627397833 | 0.00E+00 | 9.89E-02 | 3.93E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.54E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.93E+01 | 2.55E-02 | 9.19E+00 | 9.19E+00 | 1.04E+00 | 5.84E+01 | 0.00E+00 | 3.26E+00 | 0.00E+00 | 0.00E+00 | 1.06E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.80E+02 |
| 229 | 216-T-8 | 0.48098466 | 0.00E+00 | 8.45E-03 | 3.36E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.17E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.36E+00 | 2.18E-03 | 7.85E-01 | 7.85E-01 | 8.92E-02 | 5.00E+00 | 0.00E+00 | 2.78E-01 | 0.00E+00 | 0.00E+00 | 9.09E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.92E+01 |
| 232 | 216-U-12 | 3.461399356 | 6.81E-01 | 2.26E+00 | 1.32E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.58E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.80E-01 | 3.44E-02 | 3.47E+00 | 3.47E+00 | 1.45E+00 | 5.69E-01 | 1.42E+00 | 1.64E-01 | 0.00E+00 | 7.21E-02 | 7.11E-02 | 0.00E+00 | 9.21E-03 | 0.00E+00 | 0.00E+00 | 7.11E-03 | 1.03E-02 |
| 233 | 216-U-13 | 0.003767816 | 0.00E+00 | 6.62E-05 | 2.63E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.70E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.63E-02 | 1.71E-05 | 6.15E-03 | 6.15E-03 | 6.99E-04 | 3.91E-02 | 0.00E+00 | 2.18E-03 | 0.00E+00 | 0.00E+00 | 7.12E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.06E-01 |
| 241 | 216-U-5 | 79.02030137 | 0.00E+00 | 1.31E+02 | 2.83E-01 | 0.00E+00 | 0.00E+00 | 1.81E-01 | 0.00E+00 | 1.43E-02 | 5.27E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.34E+01 | 8.34E-02 | 3.57E-15 | 3.57E-15 | 1.40E+01 | 3.50E+01 | 0.00E+00 | 2.85E+00 | 4.16E+01 | 0.00E+00 | 3.48E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.06E+00 | 5.72E+02 | |
| 242 | 216-U-6 | 79.02030137 | 0.00E+00 | 1.31E+02 | 2.83E-01 | 0.00E+00 | 0.00E+00 | 1.81E-01 | 0.00E+00 | 1.43E-02 | 5.27E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.34E+01 | 8.34E-02 | 3.57E-15 | 3.57E-15 | 1.40E+01 | 3.50E+01 | 0.00E+00 | 2.85E+00 | 4.16E+01 | 0.00E+00 | 3.48E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.06E+00 | 5.72E+02 | |
| 265 | 216-Z-7 | 6.911497938 | 0.00E+00 | 1.21E-01 | 4.83E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.12E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.83E+01 | 3.13E-02 | 1.13E+01 | 1.13E+01 | 1.28E+00 | 7.18E+01 | 0.00E+00 | 4.00E+00 | 0.00E+00 | 0.00E+00 | 1.31E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.52E+02 | |

^a - The 241-BX-102 results were removed from the SIM Solids output, and they were allocated to the liquids only.

Table 7-3. Mean of Cumulative Inventory (Ci) for the Entrained Solids for Radionuclide (Decayed to 1/1/2001) (3 sheets)^a

| Site_ID | Site_Name | H-3 | C-14 | Ni-59 | Ni-63 | Co-60 | Se-79 | Sr-90 | Y-90 | Zr-93 | Nb-93m | Tc-99 | Ru-106 | Cd-113m | Sb-125 | Sn-126 | I-129 | Cs-134 | Cs-137 | Ba-137m | Sm-151 | Eu-152 | Eu-154 | Eu-155 |
|---------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 108 | 216-B-20 | 5.698E-03 | 2.016E-04 | 3.200E-03 | 2.936E-01 | 2.547E-04 | 8.263E-06 | 1.918E+02 | 1.918E+02 | 2.218E-04 | 1.976E-04 | 2.763E-03 | 1.333E-13 | 2.705E-04 | 7.464E-06 | 3.115E-05 | 5.567E-06 | 3.269E-06 | 3.668E+02 | 3.464E+02 | 3.288E-01 | 1.177E-05 | 8.949E-04 | 5.227E-04 |
| 116 | 216-B-26 | 2.402E-03 | 9.312E-05 | 2.018E-03 | 1.763E-01 | 7.243E-05 | 4.203E-06 | 3.838E+02 | 3.839E+02 | 1.129E-06 | 9.980E-07 | 1.464E-03 | 1.243E-15 | 1.262E-04 | 3.749E-06 | 1.586E-05 | 1.878E-06 | 3.954E-06 | 4.451E+02 | 4.203E+02 | 1.558E-01 | 5.690E-06 | 4.323E-04 | 2.532E-04 |
| 146 | 216-B-53A | 2.006E-04 | 1.928E-06 | 1.819E-05 | 1.754E-03 | 1.298E-05 | 8.104E-08 | 9.955E-02 | 9.958E-02 | 4.805E-06 | 3.604E-06 | 3.437E-05 | 5.303E-10 | 7.126E-06 | 6.309E-06 | 3.488E-07 | 0.000E+00 | 8.947E-07 | 1.171E-01 | 1.106E-01 | 3.157E-03 | 2.024E-06 | 1.454E-04 | 5.339E-05 |
| 147 | 216-B-53B | 5.832E-05 | 5.606E-07 | 5.288E-06 | 5.098E-04 | 3.774E-06 | 2.356E-08 | 2.894E-02 | 2.895E-02 | 1.397E-06 | 1.048E-06 | 9.992E-06 | 1.542E-10 | 2.071E-06 | 1.834E-06 | 1.014E-07 | 0.000E+00 | 2.601E-07 | 3.405E-02 | 3.216E-02 | 9.177E-04 | 5.883E-07 | 4.226E-05 | 1.552E-05 |
| 148 | 216-B-54 | 5.832E-05 | 5.606E-07 | 5.288E-06 | 5.098E-04 | 3.774E-06 | 2.356E-08 | 2.894E-02 | 2.895E-02 | 1.397E-06 | 1.048E-06 | 9.992E-06 | 1.542E-10 | 2.071E-06 | 1.834E-06 | 1.014E-07 | 0.000E+00 | 2.601E-07 | 3.405E-02 | 3.216E-02 | 9.177E-04 | 5.883E-07 | 4.226E-05 | 1.552E-05 |
| 151 | 216-B-58 | 4.666E-05 | 4.485E-07 | 4.230E-06 | 4.079E-04 | 3.019E-06 | 1.885E-08 | 2.315E-02 | 2.316E-02 | 1.117E-06 | 8.381E-07 | 7.993E-06 | 1.233E-10 | 1.657E-06 | 1.467E-06 | 8.111E-08 | 0.000E+00 | 2.081E-07 | 2.724E-02 | 2.572E-02 | 7.342E-04 | 4.706E-07 | 3.381E-05 | 1.242E-05 |
| 154 | 216-B-60 | 4.600E-06 | 4.422E-08 | 4.171E-07 | 4.022E-05 | 2.977E-07 | 1.858E-09 | 2.283E-03 | 2.283E-03 | 1.102E-07 | 8.264E-08 | 7.881E-07 | 1.215E-11 | 1.634E-07 | 1.447E-07 | 7.998E-09 | 0.000E+00 | 2.052E-08 | 2.686E-03 | 2.536E-03 | 7.239E-05 | 4.640E-08 | 3.333E-06 | 1.224E-06 |
| 330 | UPR-200-E-87 | 1.606E-09 | 3.584E-06 | 9.375E-07 | 7.994E-05 | 1.699E-06 | 1.601E-07 | 5.757E-04 | 5.759E-04 | 0.000E+00 | 0.000E+00 | 3.242E-07 | 7.626E-15 | 3.766E-06 | 4.930E-08 | 5.776E-07 | 1.435E-10 | 8.881E-13 | 6.609E-04 | 6.240E-04 | 1.122E-01 | 1.389E-06 | 1.346E-04 | 1.092E-04 |
| 73 | 216-A-25 | 6.458E-05 | 1.630E-05 | 4.234E-04 | 4.078E-02 | 7.635E-03 | 2.969E-06 | 1.543E+02 | 1.543E+02 | 1.767E-04 | 1.393E-04 | 9.275E-04 | 4.999E-08 | 2.041E-04 | 1.703E-03 | 1.238E-05 | 5.569E-08 | 5.496E-06 | 3.974E+00 | 3.753E+00 | 4.809E+00 | 1.109E-03 | 8.879E-02 | 4.915E-02 |
| 184 | 216-S-16P | 0.000E+00 |
| 185 | 216-S-17 | 6.320E-05 | 3.450E-06 | 1.630E-05 | 1.471E-03 | 4.659E-06 | 1.597E-07 | 4.454E+00 | 4.456E+00 | 9.558E-06 | 8.220E-06 | 6.061E-05 | 1.273E-13 | 6.567E-06 | 4.063E-07 | 6.466E-07 | 9.706E-08 | 9.059E-09 | 1.714E-01 | 1.619E-01 | 6.712E-03 | 6.801E-07 | 4.596E-05 | 1.888E-05 |
| 126 | 216-B-35 | 9.044E-03 | 1.199E-04 | 3.944E-05 | 5.458E-03 | 4.711E-04 | 3.944E-06 | 5.385E+00 | 5.386E+00 | 4.901E-03 | 4.311E-03 | 3.000E-04 | 1.955E-12 | 2.391E-04 | 6.882E-06 | 1.537E-05 | 2.618E-06 | 8.026E-09 | 6.785E-01 | 6.408E-01 | 3.143E-01 | 1.723E-05 | 1.204E-03 | 5.469E-04 |
| 127 | 216-B-36 | 1.655E-02 | 2.195E-04 | 7.218E-05 | 9.988E-03 | 8.621E-04 | 7.219E-06 | 9.856E+00 | 9.858E+00 | 8.969E-03 | 7.889E-03 | 5.490E-04 | 3.579E-12 | 4.377E-04 | 1.259E-05 | 2.813E-05 | 4.791E-06 | 1.469E-08 | 1.242E+00 | 1.173E+00 | 5.753E-01 | 3.153E-05 | 2.204E-03 | 1.001E-03 |
| 128 | 216-B-37 | 3.686E-02 | 4.888E-04 | 1.607E-04 | 2.224E-02 | 1.920E-03 | 1.608E-05 | 2.195E+01 | 2.195E+01 | 1.997E-02 | 1.757E-02 | 1.223E-03 | 7.969E-12 | 9.746E-04 | 2.805E-05 | 6.265E-05 | 1.067E-05 | 3.271E-08 | 2.765E+00 | 2.611E+00 | 1.281E+00 | 7.020E-05 | 4.907E-03 | 2.229E-03 |
| 129 | 216-B-38 | 1.220E-02 | 1.618E-04 | 5.321E-05 | 7.363E-03 | 6.355E-04 | 5.321E-06 | 7.265E+00 | 7.266E+00 | 6.611E-03 | 5.815E-03 | 4.047E-04 | 2.638E-12 | 3.226E-04 | 9.284E-06 | 2.074E-05 | 3.531E-06 | 1.083E-08 | 9.154E-01 | 8.644E-01 | 4.240E-01 | 2.324E-05 | 1.624E-03 | 7.379E-04 |
| 130 | 216-B-39 | 1.314E-02 | 1.742E-04 | 5.730E-05 | 7.929E-03 | 6.844E-04 | 5.731E-06 | 7.824E+00 | 7.825E+00 | 7.120E-03 | 6.263E-03 | 4.358E-04 | 2.841E-12 | 3.474E-04 | 9.998E-06 | 2.233E-05 | 3.803E-06 | 1.166E-08 | 9.858E-01 | 9.309E-01 | 4.566E-01 | 2.503E-05 | 1.749E-03 | 7.946E-04 |
| 132 | 216-B-40 | 1.399E-02 | 1.856E-04 | 6.102E-05 | 8.444E-03 | 7.288E-04 | 6.103E-06 | 8.332E+00 | 8.334E+00 | 7.582E-03 | 6.669E-03 | 4.641E-04 | 3.025E-12 | 3.700E-04 | 1.065E-05 | 2.378E-05 | 4.050E-06 | 1.242E-08 | 1.050E+00 | 9.914E-01 | 4.863E-01 | 2.665E-05 | 1.863E-03 | 8.462E-04 |
| 133 | 216-B-41 | 1.229E-02 | 1.629E-04 | 5.358E-05 | 7.414E-03 | 6.399E-04 | 5.359E-06 | 7.316E+00 | 7.317E+00 | 6.657E-03 | 5.856E-03 | 4.075E-04 | 2.656E-12 | 3.249E-04 | 9.349E-06 | 2.088E-05 | 3.556E-06 | 1.090E-08 | 9.218E-01 | 8.705E-01 | 4.270E-01 | 2.340E-05 | 1.636E-03 | 7.430E-04 |
| 137 | 216-B-45 | 2.165E-03 | 8.394E-05 | 2.000E-03 | 1.747E-01 | 6.529E-05 | 3.788E-06 | 3.360E+02 | 3.361E+02 | 1.018E-06 | 8.996E-07 | 1.320E-03 | 1.121E-15 | 1.137E-04 | 3.380E-06 | 1.429E-05 | 1.692E-06 | 3.499E-06 | 3.939E+02 | 3.719E+02 | 1.404E-01 | 5.129E-06 | 3.897E-04 | 2.282E-04 |
| 142 | 216-B-5 | 1.885E-08 | 4.208E-05 | 1.101E-05 | 9.385E-04 | 1.995E-05 | 1.880E-06 | 6.760E-03 | 6.761E-03 | 0.000E+00 | 0.000E+00 | 3.806E-06 | 8.953E-14 | 4.421E-05 | 5.788E-07 | 6.781E-06 | 1.685E-09 | 1.043E-11 | 7.759E-03 | 7.327E-03 | 1.317E+00 | 1.631E-05 | 1.580E-03 | 1.282E-03 |
| 157 | 216-B-7A&B | 1.377E-03 | 1.396E-05 | 1.400E-04 | 1.346E-02 | 1.971E-04 | 6.470E-07 | 1.194E+00 | 1.194E+00 | 3.839E-05 | 2.913E-05 | 2.643E-04 | 4.621E-08 | 5.433E-05 | 6.718E-05 | 2.771E-06 | 1.713E-09 | 6.224E-06 | 9.179E-01 | 8.667E-01 | 1.246E-01 | 3.464E-05 | 2.628E-03 | 1.230E-03 |
| 188 | 216-S-21 | 3.888E-03 | 1.600E-04 | 3.830E-04 | 3.631E-02 | 8.889E-04 | 1.498E-05 | 1.855E+00 | 1.855E+00 | 8.957E-04 | 7.362E-04 | 5.560E-03 | 1.807E-09 | 8.292E-04 | 2.050E-04 | 6.078E-05 | 8.581E-06 | 1.255E-05 | 1.655E+01 | 1.563E+01 | 1.133E+00 | 1.917E-04 | 1.292E-02 | 5.415E-03 |
| 202 | 216-T-14 | 8.583E-03 | 1.138E-04 | 3.743E-05 | 5.180E-03 | 4.471E-04 | 3.744E-06 | 5.111E+00 | 5.112E+00 | 4.651E-03 | 4.091E-03 | 2.847E-04 | 1.856E-12 | 2.270E-04 | 6.531E-06 | 1.459E-05 | 2.484E-06 | 7.617E-09 | 6.440E-01 | 6.081E-01 | 2.983E-01 | 1.635E-05 | 1.143E-03 | 5.191E-04 |
| 203 | 216-T-15 | 8.890E-03 | 1.179E-04 | 3.877E-05 | 5.365E-03 | 4.631E-04 | 3.877E-06 | 5.294E+00 | 5.295E+00 | 4.817E-03 | 4.238E-03 | 2.949E-04 | 1.922E-12 | 2.351E-04 | 6.765E-06 | 1.511E-05 | 2.573E-06 | 7.890E-09 | 6.670E-01 | 6.299E-01 | 3.090E-01 | 1.693E-05 | 1.184E-03 | 5.377E-04 |
| 204 | 216-T-16 | 8.703E-03 | 1.154E-04 | 3.795E-05 | 5.252E-03 | 4.533E-04 | 3.796E-06 | 5.182E+00 | 5.183E+00 | 4.716E-03 | 4.148E-03 | 2.886E-04 | 1.882E-12 | 2.301E-04 | 6.622E-06 | 1.479E-05 | 2.519E-06 | 7.723E-09 | 6.529E-01 | 6.166E-01 | 3.025E-01 | 1.658E-05 | 1.159E-03 | 5.263E-04 |
| 205 | 216-T-17 | 6.698E-03 | 8.882E-05 | 2.921E-05 | 4.042E-03 | 3.488E-04 | 2.921E-06 | 3.988E+00 | 3.989E+00 | 3.629E-03 | 3.192E-03 | 2.221E-04 | 1.448E-12 | 1.771E-04 | 5.096E-06 | 1.138E-05 | 1.939E-06 | 5.944E-09 | 5.025E-01 | 4.745E-01 | 2.328E-01 | 1.276E-05 | 8.917E-04 | 4.051E-04 |
| 206 | 216-T-18 | 6.522E-04 | 7.375E-04 | 1.236E-03 | 1.111E-01 | 1.696E-04 | 5.927E-06 | 3.496E+01 | 3.497E+01 | 1.175E-01 | 1.012E-01 | 4.250E-04 | 1.543E-11 | 2.028E-04 | 1.180E-05 | 2.140E-05 | 4.099E-06 | 4.961E-07 | 4.018E+01 | 3.794E+01 | 5.277E-01 | 8.790E-06 | 1.100E-03 | 1.454E-03 |
| 207 | 216-T-19 | 1.225E-06 | 3.863E-06 | 1.008E-06 | 8.903E-05 | 3.543E-06 | 1.751E-07 | 4.111E-03 | 4.112E-03 | 1.054E-04 | 9.236E-05 | 2.093E-06 | 1.337E-13 | 5.773E-06 | 2.025E-07 | 6.741E-07 | 0.000E+00 | 5.708E-11 | 4.790E-03 | 4.523E-03 | 3.575E-02 | 1.707E-06 | 1.254E-04 | 6.892E-05 |
| 210 | 216-T-21 | 3.950E-03 | 5.239E-05 | 1.723E-05 | 2.384E-03 | 2.058E-04 | 1.723E-06 | 2.352E+00 | 2.353E+00 | 2.141E-03 | 1.883E-03 | 1.310E-04 | 8.541E-13 | 1.045E-04 | 3.006E-06 | 6.714E-06 | 1.143E-06 | 3.506E-09 | 2.964E-01 | 2.799E-01 | 1.373E-01 | 7.524E-06 | 5.259E-04 | 2.389E-04 |
| 211 | 216-T-22 | 1.314E-02 | 1.742E-04 | 5.730E-05 | 7.929E-03 | 6.844E-04 | 5.731E-06 | 7.824E+00 | 7.825E+00 | 7.120E-03 | 6.263E-03 | 4.358E-04 | 2.841E-12 | 3.474E-04 | 9.998E-06 | 2.233E-05 | 3.803E-06 | 1.166E-08 | 9.858E-01 | 9.309E-01 | 4.566E-01 | 2.503E-05 | 1.749E-03 | 7.946E-04 |
| 212 | 216-T-23 | 1.268E-02 | 1.681E-04 | 5.529E-05 | 7.651E-03 | 6.604E-04 | 5.530E-06 | 7.549E+00 | 7.551E+00 | 6.870E-03 | 6.043E-03 | 4.205E-04 | 2.741E-12 | 3.353E-04 | 9.647E-06 | 2.155E-05 | 3.670E-06 | 1.125E-08 | 9.512E-01 | 8.983E-01 | 4.406E-01 | 2.415E-05 | 1.688E-03 | 7.668E-04 |
| 213 | 216-T-24 | 1.314E-02 | 1.742E-04 | 5.730E-05 | 7.929E-03 | 6.844E-04 | 5.731E-06 | 7.824E+00 | 7.825E+00 | 7.120E-03 | 6.263E-03 | 4.358E-04 | 2.841E-12 | 3.474E-04 | 9.998E-06 | 2.233E-05 | 3.803E-06 | 1.166E-08 | 9.858E-01 | 9.309E-01 | 4.566E-01 | 2.503E-05 | 1.749E-03 | 7.946E-04 |
| 214 | 216-T-25 | 2.549E-02 | 3.380E-04 | 1.111E-04 | 1.538E-02 | 1.327E-03 | 1.112E-05 | 1.517E+01 | 1.518E+01 | 1.381E-02 | 1.215E-02 | 8.453E-04 | 5.510E-12 | 6.739E-04 | 1.939E-05 | 4.332E-05 | 7.376E-06 | 2.262E-08 | 1.912E+00 | 1.806E+00 | 8.857E-01 | 4.854E-05 | 3.393E-03 | 1.541E-03 |
| 215 | 216-T-26 | 7.045E-03 | 7.967E-03 | 1.335E-02 | 1.200E+00 | 1.832E-03 | 6.402E-05 | 3.776E+02 | 3.777E+02 | 1.269E+00 | 1.093E+00 | 4.591E-03 | 1.667E-10 | 2.191E-03 | 1.275E-04 | 2.312E-04 | 4.428E-05 | 5.359E-06 | 4.340E+02 | 4.098E+02 | 5.701E+00 | 9.495E-05 | 1.188E-02 | 1.571E-02 |
| 219 | 216-T-3 | 9.537E-09 | 2.129E-05 | 5.569E-06 | 4.748E-04 | 1.009E-05 | 9.512E-07 | 3.420E-03 | 3.421E-03 | | | | | | | | | | | | | | | |

ECF-HANFORD-20-0072, REV. 0

| Site_ID | Site_Name | H-3 | C-14 | Ni-59 | Ni-63 | Co-60 | Se-79 | Sr-90 | Y-90 | Zr-93 | Nb-93m | Tc-99 | Ru-106 | Cd-113m | Sb-125 | Sn-126 | I-129 | Cs-134 | Cs-137 | Ba-137m | Sm-151 | Eu-152 | Eu-154 | Eu-155 |
|---------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 335 | UPR-200-W-102 | 1.369E-07 | 5.662E-06 | 1.477E-06 | 1.305E-04 | 5.192E-06 | 2.567E-07 | 1.021E-03 | 1.021E-03 | 0.000E+00 | 0.000E+00 | 5.198E-07 | 4.900E-12 | 8.461E-06 | 2.968E-07 | 9.879E-07 | 0.000E+00 | 1.418E-11 | 1.190E-03 | 1.124E-03 | 1.746E-01 | 8.339E-06 | 6.126E-04 | 3.367E-04 |
| 225 | 216-T-4A | 1.801E-06 | 1.731E-08 | 1.633E-07 | 1.575E-05 | 1.165E-07 | 7.276E-10 | 8.938E-04 | 8.940E-04 | 4.314E-08 | 3.236E-08 | 3.086E-07 | 4.756E-12 | 6.398E-08 | 5.688E-08 | 3.131E-09 | 0.000E+00 | 8.144E-09 | 1.052E-03 | 9.931E-04 | 2.834E-05 | 1.835E-08 | 1.305E-06 | 4.794E-07 |
| 187 | 216-S-20 | 1.690E-04 | 1.625E-06 | 1.533E-05 | 1.478E-03 | 1.094E-05 | 6.828E-08 | 8.388E-04 | 8.390E-02 | 4.049E-06 | 3.036E-06 | 2.896E-05 | 4.468E-10 | 6.004E-06 | 5.316E-06 | 2.939E-07 | 0.000E+00 | 7.538E-07 | 9.870E-02 | 9.320E-02 | 2.660E-03 | 1.705E-06 | 1.225E-04 | 4.499E-05 |
| 195 | 216-S-5 | 4.213E-04 | 2.300E-05 | 1.087E-04 | 9.809E-03 | 3.106E-05 | 1.065E-06 | 2.970E+01 | 2.970E+01 | 6.372E-05 | 5.480E-05 | 4.041E-04 | 8.489E-13 | 4.378E-05 | 2.709E-06 | 4.311E-06 | 6.470E-07 | 6.039E-08 | 1.143E+00 | 1.079E+00 | 4.475E-02 | 4.534E-06 | 3.064E-04 | 1.258E-04 |
| 196 | 216-S-6 | 0.000E+00 |
| 201 | 216-T-12 | 4.266E-05 | 5.657E-07 | 1.860E-07 | 2.574E-05 | 2.222E-06 | 1.861E-08 | 2.540E-02 | 2.541E-02 | 2.312E-05 | 2.033E-05 | 1.415E-06 | 9.223E-15 | 1.128E-06 | 3.246E-08 | 7.251E-08 | 1.235E-08 | 3.786E-11 | 3.201E-03 | 3.022E-03 | 1.483E-03 | 8.125E-08 | 5.679E-06 | 2.580E-06 |
| 216 | 216-T-27 | 6.221E-05 | 5.980E-07 | 5.640E-06 | 5.438E-04 | 4.025E-06 | 2.513E-08 | 3.087E-02 | 3.088E-02 | 1.490E-06 | 1.118E-06 | 1.066E-05 | 1.644E-10 | 2.210E-06 | 1.956E-06 | 1.081E-07 | 0.000E+00 | 2.774E-07 | 3.632E-02 | 3.430E-02 | 9.789E-04 | 6.275E-07 | 4.508E-05 | 1.656E-05 |
| 217 | 216-T-28 | 2.333E-03 | 2.242E-05 | 2.115E-04 | 2.039E-02 | 1.509E-04 | 9.423E-07 | 1.158E+00 | 1.158E+00 | 5.587E-05 | 4.191E-05 | 3.997E-04 | 6.166E-09 | 8.286E-05 | 7.337E-05 | 4.056E-06 | 0.000E+00 | 1.040E-05 | 1.362E+00 | 1.286E+00 | 3.671E-02 | 2.353E-05 | 1.690E-03 | 6.208E-04 |
| 221 | 216-T-33 | 1.217E-04 | 1.170E-06 | 1.103E-05 | 1.064E-03 | 7.875E-06 | 4.916E-08 | 6.039E-02 | 6.041E-02 | 2.915E-06 | 2.186E-06 | 2.085E-05 | 3.217E-10 | 4.323E-06 | 3.827E-06 | 2.116E-07 | 0.000E+00 | 5.427E-07 | 7.106E-02 | 6.710E-02 | 1.915E-03 | 1.228E-06 | 8.819E-05 | 3.239E-05 |
| 222 | 216-T-34 | 3.408E-04 | 3.276E-06 | 3.090E-05 | 2.979E-03 | 2.205E-05 | 1.376E-07 | 1.691E-01 | 1.691E-01 | 8.162E-06 | 6.122E-06 | 5.838E-05 | 8.999E-10 | 1.210E-05 | 1.072E-05 | 5.924E-07 | 0.000E+00 | 1.520E-06 | 1.990E-01 | 1.879E-01 | 5.362E-03 | 3.437E-06 | 2.469E-04 | 9.069E-05 |
| 224 | 216-T-36 | 1.240E-03 | 1.192E-05 | 1.124E-04 | 1.084E-02 | 8.023E-05 | 5.008E-07 | 6.153E-01 | 6.154E-01 | 2.970E-05 | 2.227E-05 | 2.124E-04 | 3.277E-09 | 4.404E-05 | 3.899E-05 | 2.156E-06 | 0.000E+00 | 5.529E-06 | 7.240E-01 | 6.836E-01 | 1.951E-02 | 1.251E-05 | 8.984E-04 | 3.300E-04 |
| 229 | 216-T-8 | 3.789E-04 | 7.734E-05 | 2.007E-06 | 1.773E-04 | 7.054E-06 | 3.487E-07 | 1.522E+01 | 1.523E+01 | 9.335E-08 | 8.182E-08 | 1.687E-04 | 1.481E-16 | 1.149E-05 | 4.031E-07 | 1.342E-06 | 1.925E-07 | 4.602E-09 | 3.862E-01 | 3.647E-01 | 1.281E-02 | 6.116E-07 | 4.493E-05 | 2.470E-05 |
| 232 | 216-U-12 | 1.845E-05 | 7.702E-09 | 3.824E-06 | 3.257E-04 | 5.640E-07 | 1.312E-06 | 1.343E+01 | 1.344E+01 | 3.495E-05 | 2.737E-05 | 1.482E-04 | 3.902E-11 | 6.903E-05 | 3.097E-05 | 4.303E-06 | 1.398E-08 | 9.425E-07 | 7.071E-01 | 6.677E-01 | 1.491E-02 | 4.223E-06 | 1.682E-04 | 6.007E-05 |
| 233 | 216-U-13 | 4.305E-06 | 8.788E-07 | 2.280E-08 | 2.014E-06 | 8.015E-08 | 3.962E-09 | 1.730E-01 | 1.730E-01 | 1.061E-09 | 9.297E-10 | 1.917E-06 | 1.683E-18 | 1.306E-07 | 4.581E-09 | 1.525E-08 | 2.187E-09 | 5.230E-11 | 4.388E-03 | 4.144E-03 | 1.456E-04 | 6.950E-09 | 5.105E-07 | 2.806E-07 |
| 241 | 216-U-5 | 0.000E+00 |
| 242 | 216-U-6 | 0.000E+00 |
| 265 | 216-Z-7 | 1.538E-03 | 1.479E-05 | 1.395E-04 | 1.345E-02 | 9.954E-05 | 6.214E-07 | 7.634E-01 | 7.636E-01 | 3.685E-05 | 2.763E-05 | 2.636E-04 | 4.066E-09 | 5.464E-05 | 4.838E-05 | 2.674E-06 | 0.000E+00 | 6.860E-06 | 8.982E-01 | 8.482E-01 | 2.421E-02 | 1.552E-05 | 1.115E-03 | 4.094E-04 |
| Site_ID | Site_Name | Ra-226 | Ra-228 | Ac-227 | Pa-231 | Th-229 | Th-232 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Np-237 | Pu-238 | Pu-239 | Pu-240 | Pu-241 | Pu-242 | Am-241 | Am-243 | Cm-242 | Cm-243 | Cm-244 |
| 108 | 216-B-20 | 3.975E-08 | 1.844E-13 | 1.887E-07 | 1.683E-07 | 1.599E-11 | 1.349E-13 | 1.940E-08 | 1.581E-09 | 1.555E-03 | 6.940E-05 | 1.778E-05 | 1.585E-03 | 2.245E-05 | 7.204E-04 | 9.658E-02 | 1.075E-02 | 2.176E-02 | 1.545E-07 | 1.288E-03 | 1.736E-07 | 2.991E-07 | 3.547E-09 | 8.338E-08 |
| 116 | 216-B-26 | 2.004E-08 | 9.378E-14 | 9.710E-08 | 8.353E-10 | 4.477E-12 | 3.790E-14 | 5.008E-08 | 4.081E-09 | 4.015E-03 | 1.792E-04 | 4.591E-05 | 4.092E-03 | 1.162E-05 | 6.080E-04 | 8.519E-02 | 9.182E-03 | 1.791E-02 | 1.257E-07 | 6.416E-04 | 9.065E-08 | 1.562E-07 | 1.851E-09 | 4.349E-08 |
| 146 | 216-B-53A | 6.979E-12 | 7.056E-09 | 1.865E-08 | 2.894E-08 | 4.364E-09 | 5.589E-09 | 3.177E-03 | 1.882E-01 | 1.370E-02 | 5.274E-04 | 6.004E-04 | 9.202E-03 | 7.272E-08 | 3.096E-01 | 2.741E+00 | 9.590E-01 | 1.815E+01 | 1.636E-04 | 1.287E-04 | 1.230E-07 | 2.052E-07 | 2.215E-08 | 5.424E-07 |
| 147 | 216-B-53B | 2.029E-12 | 2.051E-09 | 5.421E-09 | 8.413E-09 | 1.269E-09 | 1.625E-09 | 9.235E-04 | 5.471E-02 | 3.983E-03 | 1.533E-04 | 1.745E-04 | 2.675E-03 | 2.114E-08 | 8.999E-02 | 7.969E-01 | 2.788E-01 | 5.275E+00 | 4.757E-05 | 3.740E-05 | 3.575E-08 | 5.965E-08 | 6.438E-09 | 1.577E-07 |
| 148 | 216-B-54 | 2.029E-12 | 2.051E-09 | 5.421E-09 | 8.413E-09 | 1.269E-09 | 1.625E-09 | 9.235E-04 | 5.471E-02 | 3.983E-03 | 1.533E-04 | 1.745E-04 | 2.675E-03 | 2.114E-08 | 8.999E-02 | 7.969E-01 | 2.788E-01 | 5.275E+00 | 4.757E-05 | 3.740E-05 | 3.575E-08 | 5.965E-08 | 6.438E-09 | 1.577E-07 |
| 151 | 216-B-58 | 1.623E-12 | 1.641E-09 | 4.337E-09 | 6.730E-09 | 1.015E-09 | 1.300E-09 | 7.388E-04 | 4.377E-02 | 3.186E-03 | 1.226E-04 | 1.396E-04 | 2.140E-03 | 1.691E-08 | 7.199E-02 | 6.376E-01 | 2.230E-01 | 4.220E+00 | 3.806E-05 | 2.992E-05 | 2.860E-08 | 4.772E-08 | 5.150E-09 | 1.261E-07 |
| 154 | 216-B-60 | 1.600E-13 | 1.618E-10 | 4.276E-10 | 6.636E-10 | 1.001E-10 | 1.282E-10 | 7.278E-05 | 4.315E-03 | 3.142E-04 | 1.209E-05 | 1.377E-05 | 2.110E-04 | 1.667E-09 | 7.113E-03 | 6.286E-02 | 2.197E-02 | 4.175E-01 | 3.846E-06 | 2.948E-06 | 2.896E-09 | 4.792E-09 | 5.159E-10 | 1.269E-08 |
| 330 | UPR-200-E-87 | 1.177E-09 | 3.945E-15 | 5.004E-08 | 1.053E-06 | 3.907E-11 | 3.270E-13 | 5.400E-13 | 4.781E-14 | 6.180E-08 | 2.789E-09 | 5.278E-10 | 6.286E-08 | 3.884E-06 | 8.920E-03 | 2.578E+00 | 1.740E-01 | 1.684E-01 | 7.943E-07 | 8.418E-05 | 3.789E-09 | 6.632E-09 | 3.805E-11 | 8.969E-10 |
| 73 | 216-A-25 | 1.311E-10 | 1.072E-15 | 6.057E-10 | 9.263E-10 | 7.940E-13 | 1.114E-15 | 3.327E-09 | 6.046E-09 | 4.265E-05 | 1.782E-06 | 1.095E-06 | 4.167E-05 | 2.498E-06 | 6.135E-04 | 1.277E-02 | 3.131E-03 | 2.785E-02 | 2.266E-07 | 5.846E-02 | 3.122E-05 | 5.246E-05 | 3.230E-06 | 7.545E-05 |
| 184 | 216-S-16P | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 2.750E-06 | 2.158E-07 | 1.804E-01 | 7.985E-03 | 2.450E-03 | 1.841E-01 | 0.000E+00 |
| 185 | 216-S-17 | 9.170E-12 | 5.154E-17 | 3.936E-11 | 5.840E-11 | 1.935E-13 | 5.539E-17 | 5.373E-10 | 2.645E-09 | 1.321E-05 | 5.685E-07 | 2.731E-07 | 1.352E-05 | 4.415E-07 | 3.108E-05 | 1.636E-03 | 3.178E-04 | 1.105E-03 | 9.652E-09 | 8.273E-04 | 3.032E-07 | 2.489E-08 | 4.595E-10 | 1.130E-08 |
| 126 | 216-B-35 | 1.299E-08 | 8.434E-14 | 3.933E-08 | 8.594E-07 | 5.844E-11 | 4.929E-13 | 2.065E-08 | 1.560E-09 | 1.140E-03 | 5.021E-05 | 1.690E-05 | 1.164E-03 | 6.898E-06 | 3.830E-03 | 3.765E-01 | 5.334E-02 | 1.231E-01 | 9.321E-07 | 7.710E-04 | 8.868E-08 | 1.526E-07 | 1.855E-09 | 4.356E-08 |
| 127 | 216-B-36 | 2.377E-08 | 1.543E-13 | 7.199E-08 | 1.573E-06 | 1.070E-10 | 9.021E-13 | 3.780E-08 | 2.855E-09 | 2.086E-03 | 9.189E-05 | 3.092E-05 | 2.131E-03 | 1.263E-05 | 7.009E-03 | 6.891E-01 | 9.762E-02 | 2.252E-01 | 1.706E-06 | 1.411E-03 | 1.623E-07 | 2.793E-07 | 3.395E-09 | 7.972E-08 |
| 128 | 216-B-37 | 5.292E-08 | 3.437E-13 | 1.603E-07 | 3.503E-06 | 2.382E-10 | 2.009E-12 | 8.417E-08 | 6.358E-09 | 4.645E-03 | 2.046E-04 | 6.886E-05 | 4.744E-03 | 2.811E-05 | 1.561E-02 | 1.534E+00 | 2.174E-01 | 5.016E-01 | 3.799E-06 | 3.142E-03 | 3.614E-07 | 6.220E-07 | 7.560E-09 | 1.775E-07 |
| 129 | 216-B-38 | 1.752E-08 | 1.138E-13 | 5.306E-08 | 1.159E-06 | 7.884E-11 | 6.650E-13 | 2.786E-08 | 2.105E-09 | 1.538E-03 | 6.773E-05 | 2.279E-05 | 1.571E-03 | 9.306E-06 | 5.166E-03 | 5.079E-01 | 7.196E-02 | 1.660E-01 | 1.257E-06 | 1.040E-03 | 1.196E-07 | 2.059E-07 | 2.502E-09 | 5.876E-08 |
| 130 | 216-B-39 | 1.887E-08 | 1.225E-13 | 5.714E-08 | 1.249E-06 | 8.490E-11 | 7.161E-13 | 3.001E-08 | 2.267E-09 | 1.656E-03 | 7.294E-05 | 2.455E-05 | 1.691E-03 | 1.002E-05 | 5.564E-03 | 5.470E-01 | 7.749E-02 | 1.788E-01 | 1.354E-06 | 1.120E-03 | 1.288E-07 | 2.217E-07 | 2.695E-09 | 6.328E-08 |
| 132 | 216-B-40 | 2.009E-08 | 1.305E-13 | 6.086E-08 | 1.330E-06 | 9.042E-11 | 7.626E-13 | 3.195E-08 | 2.414E-09 | 1.763E-03 | 7.768E-05 | 2.614E-05 | 1.801E-03 | 1.067E-05 | 5.925E-03 | 5.825E-01 | 8.252E-02 | 1.904E-01 | 1.442E-06 | 1.193E-03 | | | | |

ECF-HANFORD-20-0072, REV. 0

| Site_ID | Site_Name | Ra-226 | Ra-228 | Ac-227 | Pa-231 | Th-229 | Th-232 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Np-237 | Pu-238 | Pu-239 | Pu-240 | Pu-241 | Pu-242 | Am-241 | Am-243 | Cm-242 | Cm-243 | Cm-244 |
|---------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 226 | 216-T-5 | 7.339E-09 | 4.329E-14 | 6.398E-08 | 1.434E-06 | 8.584E-11 | 7.310E-13 | 1.961E-10 | 1.539E-11 | 1.286E-05 | 5.692E-07 | 1.747E-07 | 1.313E-05 | 1.007E-05 | 6.722E-03 | 7.584E-01 | 9.610E-02 | 2.111E-01 | 1.535E-06 | 7.063E-04 | 1.093E-07 | 1.882E-07 | 2.273E-09 | 5.342E-08 |
| 227 | 216-T-6 | 6.260E-10 | 2.099E-15 | 2.662E-08 | 5.604E-07 | 2.079E-11 | 1.740E-13 | 2.873E-13 | 2.544E-14 | 3.288E-08 | 1.484E-09 | 2.808E-10 | 3.345E-08 | 2.066E-06 | 4.746E-03 | 1.372E+00 | 9.258E-02 | 8.959E-02 | 4.226E-07 | 4.479E-05 | 2.016E-09 | 3.529E-09 | 2.025E-11 | 4.772E-10 |
| 228 | 216-T-7 | 1.152E-07 | 5.782E-13 | 1.064E-06 | 2.337E-05 | 1.237E-09 | 1.049E-11 | 2.455E-09 | 1.976E-10 | 1.851E-04 | 8.240E-06 | 2.230E-06 | 1.887E-04 | 1.404E-04 | 1.356E-01 | 1.566E+01 | 1.949E+00 | 4.233E+00 | 3.069E-05 | 8.565E-03 | 1.263E-06 | 2.175E-06 | 2.598E-08 | 6.106E-07 |
| 55 | 216-A-1 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 6.702E-07 | 5.259E-08 | 4.396E-02 | 1.946E-03 | 5.971E-04 | 4.486E-02 | 0.000E+00 |
| 64 | 216-A-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 3.324E-06 | 2.608E-07 | 2.180E-01 | 9.649E-03 | 2.961E-03 | 2.225E-01 | 0.000E+00 |
| 65 | 216-A-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 2.164E-04 | 1.698E-05 | 1.420E+01 | 6.284E-01 | 1.928E-01 | 1.449E+01 | 0.000E+00 |
| 67 | 216-A-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 3.065E-06 | 2.405E-07 | 2.010E-01 | 8.898E-03 | 2.731E-03 | 2.052E-01 | 0.000E+00 |
| 76 | 216-A-27 | 1.623E-11 | 1.641E-08 | 4.337E-08 | 6.730E-08 | 1.015E-08 | 1.300E-08 | 7.388E-03 | 4.377E-01 | 3.186E-02 | 1.226E-03 | 1.396E-03 | 2.140E-02 | 1.691E-07 | 7.199E-01 | 6.376E+00 | 2.230E+00 | 4.220E+01 | 3.806E-04 | 2.992E-04 | 2.860E-07 | 4.772E-07 | 5.150E-08 | 1.261E-06 |
| 77 | 216-A-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 3.144E-06 | 2.468E-07 | 2.063E-01 | 9.129E-03 | 2.802E-03 | 2.105E-01 | 0.000E+00 |
| 79 | 216-A-30 | 7.620E-11 | 7.704E-08 | 2.036E-07 | 3.160E-07 | 4.765E-08 | 6.103E-08 | 3.468E-02 | 2.055E+00 | 1.496E-01 | 5.759E-03 | 6.556E-03 | 1.005E-01 | 7.940E-07 | 3.382E+00 | 2.994E+01 | 1.047E+01 | 2.014E+02 | 1.820E-03 | 1.435E-03 | 1.355E-06 | 2.255E-06 | 2.441E-07 | 5.985E-06 |
| 88 | 216-A-4 | 2.705E-12 | 2.735E-09 | 7.228E-09 | 1.122E-08 | 1.691E-09 | 2.166E-09 | 1.231E-03 | 7.294E-02 | 5.311E-03 | 2.044E-04 | 2.327E-04 | 3.567E-03 | 2.818E-08 | 1.200E-01 | 1.063E+00 | 3.717E-01 | 7.034E+00 | 6.343E-05 | 4.987E-05 | 4.766E-08 | 7.953E-08 | 8.583E-09 | 2.102E-07 |
| 93 | 216-A-6 | 1.016E-12 | 1.027E-09 | 2.715E-09 | 4.213E-09 | 6.354E-10 | 8.138E-10 | 4.624E-04 | 2.740E-02 | 1.995E-03 | 7.678E-05 | 8.741E-05 | 1.340E-03 | 1.059E-08 | 4.509E-02 | 3.991E-01 | 1.396E-01 | 2.644E+00 | 2.398E-05 | 1.873E-05 | 1.803E-08 | 3.002E-08 | 3.252E-09 | 7.969E-08 |
| 96 | 216-A-9 | 4.667E-10 | 4.719E-07 | 1.247E-06 | 1.936E-06 | 2.919E-07 | 3.738E-07 | 2.125E-01 | 1.259E+01 | 9.164E-01 | 3.527E-02 | 4.015E-02 | 6.154E-01 | 4.863E-06 | 2.069E+01 | 1.833E+02 | 6.414E+01 | 1.213E+03 | 1.095E-02 | 8.605E-03 | 8.245E-06 | 1.374E-05 | 1.522E-06 | 3.714E-05 |
| 100 | 216-B-12 | 4.762E-08 | 2.809E-13 | 1.285E-07 | 1.375E-10 | 8.925E-13 | 7.601E-15 | 5.969E-07 | 4.685E-08 | 3.915E-02 | 1.733E-03 | 5.318E-04 | 3.996E-02 | 2.443E-06 | 2.361E-05 | 2.664E-03 | 3.375E-04 | 7.413E-04 | 5.392E-09 | 1.713E-04 | 2.650E-08 | 4.564E-08 | 5.513E-10 | 1.296E-08 |
| 161 | 216-C-1 | 2.232E-12 | 1.104E-09 | 2.924E-09 | 4.537E-09 | 6.830E-10 | 8.748E-10 | 4.981E-04 | 2.946E-02 | 6.070E-02 | 2.674E-03 | 8.896E-04 | 6.120E-02 | 4.770E-08 | 4.888E-02 | 4.421E-01 | 1.529E-01 | 2.857E+00 | 2.575E-05 | 4.657E-04 | 2.418E-07 | 2.081E-05 | 1.116E-06 | 2.636E-05 |
| 166 | 216-C-5 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 9.714E-08 | 7.624E-09 | 6.372E-03 | 2.820E-04 | 8.655E-05 | 6.503E-03 | 0.000E+00 |
| 335 | UPR-200-W-102 | 9.254E-10 | 5.459E-15 | 4.030E-08 | 9.044E-07 | 5.413E-11 | 4.610E-13 | 9.201E-13 | 7.221E-14 | 6.036E-08 | 2.671E-09 | 8.198E-10 | 6.160E-08 | 6.345E-06 | 3.173E-02 | 3.580E+00 | 4.536E-01 | 9.964E-01 | 7.247E-06 | 4.448E-04 | 6.882E-08 | 1.185E-07 | 1.432E-09 | 3.364E-08 |
| 225 | 216-T-4A | 6.266E-14 | 6.335E-11 | 1.674E-10 | 2.598E-10 | 3.918E-11 | 5.018E-11 | 2.851E-05 | 1.690E-03 | 1.230E-04 | 4.735E-06 | 5.391E-06 | 8.262E-05 | 6.529E-10 | 2.781E-03 | 2.461E-02 | 8.607E-03 | 1.651E-01 | 1.495E-06 | 1.175E-06 | 1.116E-09 | 1.856E-09 | 2.008E-10 | 4.925E-09 |
| 187 | 216-S-20 | 5.880E-12 | 5.945E-09 | 1.571E-08 | 2.438E-08 | 3.677E-09 | 4.709E-09 | 2.677E-03 | 1.586E-01 | 1.154E-02 | 4.443E-04 | 5.059E-04 | 7.753E-03 | 6.127E-08 | 2.608E-01 | 2.310E+00 | 8.080E-01 | 1.529E+01 | 1.379E-04 | 1.084E-04 | 1.036E-07 | 1.729E-07 | 1.866E-08 | 4.570E-07 |
| 195 | 216-S-5 | 6.114E-11 | 3.436E-16 | 2.624E-10 | 3.893E-10 | 1.290E-12 | 3.693E-16 | 4.580E-06 | 3.768E-07 | 3.002E-01 | 1.329E-02 | 4.079E-03 | 3.064E-01 | 2.943E-06 | 2.072E-04 | 1.091E-02 | 2.119E-03 | 7.364E-03 | 6.434E-08 | 5.515E-03 | 2.022E-06 | 1.659E-07 | 3.063E-09 | 7.534E-08 |
| 196 | 216-S-6 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 3.500E-06 | 2.746E-07 | 2.296E-01 | 1.016E-02 | 3.118E-03 | 2.343E-01 | 0.000E+00 |
| 201 | 216-T-12 | 6.125E-11 | 3.978E-16 | 1.855E-10 | 4.054E-09 | 2.757E-13 | 2.325E-15 | 9.742E-11 | 7.359E-12 | 5.376E-06 | 2.368E-07 | 7.970E-08 | 5.491E-06 | 3.254E-08 | 1.806E-05 | 1.776E-03 | 2.516E-04 | 5.805E-04 | 4.396E-09 | 3.637E-06 | 4.183E-10 | 7.199E-10 | 8.750E-12 | 2.055E-10 |
| 216 | 216-T-27 | 2.164E-12 | 2.188E-09 | 5.782E-09 | 8.974E-09 | 1.353E-09 | 1.733E-09 | 9.850E-04 | 5.836E-02 | 4.249E-03 | 1.635E-04 | 1.862E-04 | 2.853E-03 | 2.255E-08 | 9.599E-02 | 8.501E-01 | 2.974E-01 | 5.627E+00 | 5.074E-05 | 3.989E-05 | 3.813E-08 | 6.362E-08 | 6.867E-09 | 1.682E-07 |
| 217 | 216-T-28 | 8.115E-11 | 8.204E-08 | 2.168E-07 | 3.365E-07 | 5.074E-08 | 6.499E-08 | 3.694E-02 | 2.188E+00 | 1.593E-01 | 6.132E-03 | 6.981E-03 | 1.070E-01 | 8.455E-07 | 3.600E+00 | 3.188E+01 | 1.115E+01 | 2.110E+02 | 1.903E-03 | 1.496E-03 | 1.430E-06 | 2.386E-06 | 2.575E-07 | 6.307E-06 |
| 221 | 216-T-33 | 4.234E-12 | 4.280E-09 | 1.131E-08 | 1.756E-08 | 2.647E-09 | 3.391E-09 | 1.927E-03 | 1.142E-01 | 8.312E-03 | 3.199E-04 | 3.642E-04 | 5.582E-03 | 4.411E-08 | 1.877E-01 | 1.663E+00 | 5.818E-01 | 1.100E+01 | 9.931E-05 | 7.805E-05 | 7.478E-08 | 1.247E-07 | 1.381E-08 | 3.369E-07 |
| 222 | 216-T-34 | 1.185E-11 | 1.198E-08 | 3.167E-08 | 4.916E-08 | 7.412E-09 | 9.494E-09 | 5.391E-03 | 3.197E-01 | 2.327E-02 | 8.958E-04 | 1.020E-03 | 1.563E-02 | 1.235E-07 | 5.269E-01 | 4.657E+00 | 1.628E+00 | 3.093E+01 | 2.849E-04 | 2.184E-04 | 2.145E-07 | 3.550E-07 | 3.821E-08 | 9.402E-07 |
| 224 | 216-T-36 | 4.313E-11 | 4.361E-08 | 1.152E-07 | 1.789E-07 | 2.697E-08 | 3.454E-08 | 1.963E-02 | 1.163E+00 | 8.468E-02 | 3.259E-03 | 3.711E-03 | 5.687E-02 | 4.494E-07 | 1.913E+00 | 1.694E+01 | 5.926E+00 | 1.122E+02 | 1.018E-03 | 7.950E-04 | 7.669E-07 | 1.276E-06 | 1.402E-07 | 3.429E-06 |
| 229 | 216-T-8 | 1.890E-08 | 1.115E-13 | 5.101E-08 | 5.458E-11 | 3.542E-13 | 3.016E-15 | 2.369E-07 | 1.859E-08 | 1.554E-02 | 6.877E-04 | 2.110E-04 | 1.586E-02 | 9.696E-07 | 9.369E-06 | 1.057E-03 | 1.339E-04 | 2.942E-04 | 2.140E-09 | 6.797E-05 | 1.052E-08 | 1.811E-08 | 2.188E-10 | 5.141E-09 |
| 232 | 216-U-12 | 4.422E-09 | 1.940E-05 | 1.230E-03 | 8.969E-05 | 3.191E-04 | 3.511E-04 | 1.409E-03 | 8.979E-02 | 6.803E-04 | 2.414E-09 | 4.208E-10 | 3.765E-17 | 1.646E-11 | 2.804E-09 | 1.421E-13 | 9.772E-15 | 3.763E-14 | 7.993E-20 | 5.440E-15 | 1.937E-20 | 3.659E-20 | 7.353E-22 | 1.600E-20 |
| 233 | 216-U-13 | 2.147E-10 | 1.267E-15 | 5.796E-10 | 6.202E-13 | 4.024E-15 | 3.427E-17 | 2.692E-09 | 2.112E-10 | 1.766E-04 | 7.815E-06 | 2.398E-06 | 1.802E-04 | 1.102E-08 | 1.065E-07 | 1.201E-05 | 1.522E-06 | 3.343E-06 | 2.431E-11 | 7.724E-07 | 1.195E-10 | 2.058E-10 | 2.486E-12 | 5.842E-11 |
| 241 | 216-U-5 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 2.809E-06 | 2.205E-07 | 1.843E-01 | 8.157E-03 | 2.503E-03 | 1.881E-01 | 0.000E+00 |
| 242 | 216-U-6 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 2.809E-06 | 2.205E-07 | 1.843E-01 | 8.157E-03 | 2.503E-03 | 1.881E-01 | 0.000E+00 |
| 265 | 216-Z-7 | 5.351E-11 | 5.410E-08 | 1.430E-07 | 2.219E-07 | 3.346E-08 | 4.286E-08 | 2.436E-02 | 1.443E+00 | 1.051E-01 | 4.044E-03 | 4.604E-03 | 7.056E-02 | 5.576E-07 | 2.372E+00 | 2.102E+01 | 7.354E+00 | 1.390E+02 | 1.255E-03 | 9.865E-04 | 9.452E-07 | 1.576E-06 | 1.745E-07 | 4.259E-06 |

* - The 241-BX-102 results were removed from the SIM Solids output, and they were allocated to the liquids only.

Table 7-4. Standard Deviation of Cumulative Inventory (Ci) for the Entrained Solids for Radionuclide (Decayed to 1/1/2001) (3 sheets)^a

| Site_ID | Site_Name | H-3 | C-14 | Ni-59 | Ni-63 | Co-60 | Se-79 | Sr-90 | Y-90 | Zr-93 | Nb-93m | Tc-99 | Ru-106 | Cd-113m | Sb-125 | Sn-126 | I-129 | Cs-134 | Cs-137 | Ba-137m | Sm-151 | Eu-152 | Eu-154 | Eu-155 |
|---------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 108 | 216-B-20 | 4.604E-03 | 1.557E-04 | 2.337E-03 | 2.172E-01 | 2.363E-04 | 6.269E-06 | 1.437E+02 | 1.437E+02 | 2.033E-04 | 1.805E-04 | 2.081E-03 | 2.543E-13 | 2.116E-04 | 7.282E-06 | 2.356E-05 | 4.479E-06 | 2.659E-06 | 2.411E+02 | 2.277E+02 | 2.563E-01 | 1.155E-05 | 7.708E-04 | 4.780E-04 |
| 116 | 216-B-26 | 1.624E-03 | 6.107E-05 | 1.324E-03 | 1.160E-01 | 5.347E-05 | 2.751E-06 | 2.552E+02 | 2.553E+02 | 7.400E-07 | 6.523E-07 | 9.583E-04 | 1.700E-15 | 8.394E-05 | 3.150E-06 | 1.035E-05 | 1.226E-06 | 3.240E-06 | 2.948E+02 | 2.783E+02 | 1.035E-01 | 4.777E-06 | 3.185E-04 | 1.981E-04 |
| 146 | 216-B-53A | 1.447E-04 | 1.490E-06 | 1.207E-05 | 1.174E-03 | 1.044E-05 | 5.391E-08 | 6.813E-02 | 6.815E-02 | 3.189E-06 | 2.366E-06 | 2.284E-05 | 8.263E-10 | 5.165E-06 | 6.109E-06 | 2.351E-07 | 0.000E+00 | 9.914E-07 | 8.041E-02 | 7.593E-02 | 2.090E-03 | 1.637E-06 | 1.171E-04 | 4.344E-05 |
| 147 | 216-B-53B | 4.207E-05 | 4.332E-07 | 3.507E-06 | 3.414E-04 | 3.034E-06 | 1.567E-08 | 1.981E-02 | 1.981E-02 | 9.270E-07 | 6.877E-07 | 6.640E-06 | 2.402E-10 | 1.501E-06 | 1.776E-06 | 6.834E-08 | 0.000E+00 | 2.882E-07 | 2.337E-02 | 2.207E-02 | 6.076E-04 | 4.757E-07 | 3.404E-05 | 1.263E-05 |
| 148 | 216-B-54 | 4.207E-05 | 4.332E-07 | 3.507E-06 | 3.414E-04 | 3.034E-06 | 1.567E-08 | 1.981E-02 | 1.981E-02 | 9.270E-07 | 6.877E-07 | 6.640E-06 | 2.402E-10 | 1.501E-06 | 1.776E-06 | 6.834E-08 | 0.000E+00 | 2.882E-07 | 2.337E-02 | 2.207E-02 | 6.076E-04 | 4.757E-07 | 3.404E-05 | 1.263E-05 |
| 151 | 216-B-58 | 3.365E-05 | 3.465E-07 | 2.806E-06 | 2.731E-04 | 2.428E-06 | 1.254E-08 | 1.584E-02 | 1.585E-02 | 7.416E-07 | 5.502E-07 | 5.312E-06 | 1.922E-10 | 1.201E-06 | 1.421E-06 | 5.468E-08 | 0.000E+00 | 2.306E-07 | 1.870E-02 | 1.766E-02 | 4.861E-04 | 3.806E-07 | 2.723E-05 | 1.010E-05 |
| 154 | 216-B-60 | 7.368E-06 | 8.089E-08 | 6.792E-07 | 6.649E-05 | 4.866E-07 | 2.957E-09 | 3.639E-03 | 3.640E-03 | 1.748E-07 | 1.311E-07 | 1.266E-06 | 2.173E-11 | 2.622E-07 | 2.396E-07 | 1.279E-08 | 0.000E+00 | 3.978E-08 | 4.303E-03 | 4.063E-03 | 1.221E-04 | 8.329E-08 | 5.946E-06 | 2.154E-06 |
| 330 | UPR-200-E-87 | 1.872E-09 | 4.120E-06 | 1.078E-06 | 9.195E-05 | 2.039E-06 | 1.843E-07 | 6.637E-04 | 6.639E-04 | 0.000E+00 | 0.000E+00 | 3.733E-07 | 1.516E-14 | 4.435E-06 | 6.539E-08 | 6.697E-07 | 1.658E-10 | 1.744E-12 | 7.633E-04 | 7.208E-04 | 1.284E-01 | 2.370E-06 | 1.934E-04 | 1.304E-04 |
| 73 | 216-A-25 | 7.193E-05 | 1.967E-05 | 5.057E-04 | 4.855E-02 | 8.235E-03 | 3.452E-06 | 1.757E+02 | 1.758E+02 | 2.052E-04 | 1.635E-04 | 1.082E-03 | 5.580E-08 | 2.287E-04 | 1.692E-03 | 1.443E-05 | 6.499E-08 | 5.396E-06 | 4.539E+00 | 4.286E+00 | 5.636E+00 | 1.201E-03 | 9.450E-02 | 5.282E-02 |
| 184 | 216-S-16P | 0.000E+00 |
| 185 | 216-S-17 | 5.202E-05 | 2.810E-06 | 1.318E-05 | 1.191E-03 | 3.923E-06 | 1.296E-07 | 3.603E+00 | 3.604E+00 | 7.724E-06 | 6.640E-06 | 4.907E-05 | 1.647E-13 | 5.538E-06 | 3.737E-07 | 5.359E-07 | 7.971E-08 | 9.694E-09 | 1.396E-01 | 1.318E-01 | 5.341E-03 | 7.157E-07 | 4.448E-05 | 1.578E-05 |
| 126 | 216-B-35 | 8.486E-03 | 1.091E-04 | 3.589E-05 | 4.982E-03 | 4.829E-04 | 3.582E-06 | 4.968E+00 | 4.969E+00 | 4.456E-03 | 3.909E-03 | 2.724E-04 | 3.724E-12 | 2.208E-04 | 8.036E-06 | 1.392E-05 | 2.371E-06 | 9.141E-09 | 6.235E-01 | 5.887E-01 | 2.898E-01 | 2.010E-05 | 1.232E-03 | 5.947E-04 |
| 127 | 216-B-36 | 1.553E-02 | 1.997E-04 | 6.568E-05 | 9.118E-03 | 8.839E-04 | 6.556E-06 | 9.093E+00 | 9.095E+00 | 8.155E-03 | 7.154E-03 | 4.985E-04 | 6.815E-12 | 4.040E-04 | 1.471E-05 | 2.547E-05 | 4.340E-06 | 1.673E-08 | 1.141E+00 | 1.077E+00 | 5.304E-01 | 3.679E-05 | 2.255E-03 | 1.088E-03 |
| 128 | 216-B-37 | 3.459E-02 | 4.447E-04 | 1.463E-04 | 2.030E-02 | 1.968E-03 | 1.460E-05 | 2.025E+01 | 2.025E+01 | 1.816E-02 | 1.593E-02 | 1.110E-03 | 1.518E-11 | 8.997E-04 | 3.275E-05 | 5.671E-05 | 9.664E-06 | 3.725E-08 | 2.541E+00 | 2.399E+00 | 1.181E+00 | 8.193E-05 | 5.020E-03 | 2.423E-03 |
| 129 | 216-B-38 | 1.145E-02 | 1.472E-04 | 4.841E-05 | 6.721E-03 | 6.515E-04 | 4.833E-06 | 6.702E+00 | 6.704E+00 | 6.011E-03 | 5.273E-03 | 3.675E-04 | 5.023E-12 | 2.978E-04 | 1.084E-05 | 1.877E-05 | 3.199E-06 | 1.233E-08 | 8.411E-01 | 7.942E-01 | 3.910E-01 | 2.712E-05 | 1.662E-03 | 8.022E-04 |
| 130 | 216-B-39 | 8.719E-03 | 1.121E-04 | 3.687E-05 | 5.119E-03 | 4.962E-04 | 3.680E-06 | 5.104E+00 | 5.106E+00 | 4.578E-03 | 4.016E-03 | 2.798E-04 | 3.826E-12 | 2.268E-04 | 8.256E-06 | 1.430E-05 | 2.436E-06 | 9.391E-09 | 6.405E-01 | 6.049E-01 | 2.978E-01 | 2.065E-05 | 1.266E-03 | 6.109E-04 |
| 132 | 216-B-40 | 1.313E-02 | 1.688E-04 | 5.552E-05 | 7.708E-03 | 7.472E-04 | 5.542E-06 | 7.687E+00 | 7.688E+00 | 6.894E-03 | 6.047E-03 | 4.214E-04 | 5.761E-12 | 3.415E-04 | 1.243E-05 | 2.153E-05 | 3.669E-06 | 1.414E-08 | 9.646E-01 | 9.109E-01 | 4.484E-01 | 3.110E-05 | 1.906E-03 | 9.200E-04 |
| 133 | 216-B-41 | 1.153E-02 | 1.482E-04 | 4.875E-05 | 6.768E-03 | 6.561E-04 | 4.866E-06 | 6.749E+00 | 6.751E+00 | 6.053E-03 | 5.310E-03 | 3.700E-04 | 5.058E-12 | 2.999E-04 | 1.092E-05 | 1.890E-05 | 3.221E-06 | 1.242E-08 | 8.470E-01 | 7.998E-01 | 3.937E-01 | 2.731E-05 | 1.673E-03 | 8.078E-04 |
| 137 | 216-B-45 | 2.006E-03 | 7.638E-05 | 1.819E-03 | 1.591E-01 | 6.266E-05 | 3.453E-06 | 3.068E+02 | 3.069E+02 | 9.265E-07 | 8.186E-07 | 1.203E-03 | 1.908E-15 | 1.066E-04 | 3.660E-06 | 1.315E-05 | 1.550E-06 | 5.881E-06 | 3.605E+02 | 3.404E+02 | 1.271E-01 | 7.396E-06 | 4.634E-04 | 2.179E-04 |
| 142 | 216-B-5 | 1.012E-08 | 2.176E-05 | 5.690E-06 | 4.861E-04 | 1.149E-05 | 9.761E-07 | 3.521E-03 | 3.522E-03 | 0.000E+00 | 0.000E+00 | 1.977E-06 | 1.168E-13 | 2.434E-05 | 4.119E-07 | 3.588E-06 | 8.836E-10 | 1.340E-11 | 4.064E-03 | 3.837E-03 | 6.736E-01 | 1.738E-05 | 1.297E-03 | 7.311E-04 |
| 157 | 216-B-7A&B | 1.855E-03 | 2.039E-05 | 1.722E-04 | 1.685E-02 | 2.009E-04 | 7.543E-07 | 1.147E+00 | 1.148E+00 | 4.459E-05 | 3.353E-05 | 3.209E-04 | 1.009E-07 | 6.644E-05 | 7.211E-05 | 3.260E-06 | 2.293E-09 | 1.001E-05 | 1.094E+00 | 1.033E+00 | 1.403E-01 | 3.717E-05 | 2.833E-03 | 1.391E-03 |
| 188 | 216-S-21 | 5.007E-03 | 1.991E-04 | 4.739E-04 | 4.525E-02 | 1.209E-03 | 1.870E-05 | 2.353E+00 | 2.354E+00 | 1.119E-03 | 9.155E-04 | 6.932E-03 | 3.631E-09 | 1.060E-03 | 3.078E-04 | 7.543E-05 | 1.066E-05 | 2.332E-05 | 2.092E+01 | 1.975E+01 | 1.435E+00 | 2.834E-04 | 1.912E-02 | 7.529E-03 |
| 202 | 216-T-14 | 8.054E-03 | 1.035E-04 | 3.406E-05 | 4.728E-03 | 4.583E-04 | 3.400E-06 | 4.715E+00 | 4.716E+00 | 4.229E-03 | 3.710E-03 | 2.585E-04 | 3.534E-12 | 2.095E-04 | 7.626E-06 | 1.321E-05 | 2.250E-06 | 8.675E-09 | 5.917E-01 | 5.587E-01 | 2.750E-01 | 1.908E-05 | 1.169E-03 | 5.644E-04 |
| 203 | 216-T-15 | 8.342E-03 | 1.073E-04 | 3.528E-05 | 4.898E-03 | 4.747E-04 | 3.521E-06 | 4.884E+00 | 4.885E+00 | 4.380E-03 | 3.842E-03 | 2.678E-04 | 3.660E-12 | 2.170E-04 | 7.899E-06 | 1.368E-05 | 2.331E-06 | 8.986E-09 | 6.129E-01 | 5.787E-01 | 2.849E-01 | 1.976E-05 | 1.211E-03 | 5.846E-04 |
| 204 | 216-T-16 | 8.166E-03 | 1.050E-04 | 3.453E-05 | 4.794E-03 | 4.647E-04 | 3.447E-06 | 4.781E+00 | 4.782E+00 | 4.288E-03 | 3.761E-03 | 2.621E-04 | 3.583E-12 | 2.124E-04 | 7.732E-06 | 1.339E-05 | 2.282E-06 | 8.796E-09 | 5.999E-01 | 5.665E-01 | 2.789E-01 | 1.935E-05 | 1.185E-03 | 5.722E-04 |
| 205 | 216-T-17 | 6.285E-03 | 8.080E-05 | 2.658E-05 | 3.690E-03 | 3.577E-04 | 2.653E-06 | 3.679E+00 | 3.680E+00 | 3.300E-03 | 2.895E-03 | 2.017E-04 | 2.758E-12 | 1.635E-04 | 5.951E-06 | 1.031E-05 | 1.756E-06 | 6.769E-09 | 4.617E-01 | 4.360E-01 | 2.146E-01 | 1.489E-05 | 9.123E-04 | 4.404E-04 |
| 206 | 216-T-18 | 6.123E-04 | 6.713E-04 | 1.125E-03 | 1.014E-01 | 1.740E-04 | 5.385E-06 | 3.227E+01 | 3.228E+01 | 1.069E-01 | 9.183E-02 | 3.862E-04 | 2.939E-11 | 1.873E-04 | 1.379E-05 | 1.939E-05 | 3.715E-06 | 5.653E-07 | 3.693E+01 | 3.488E+01 | 4.869E-01 | 1.026E-05 | 1.126E-03 | 1.582E-03 |
| 207 | 216-T-19 | 1.160E-06 | 3.548E-06 | 9.259E-07 | 8.206E-05 | 3.663E-06 | 1.606E-07 | 3.828E-03 | 3.829E-03 | 9.673E-05 | 8.455E-05 | 1.919E-06 | 2.561E-13 | 5.379E-06 | 2.382E-07 | 6.161E-07 | 0.000E+00 | 6.551E-11 | 4.443E-03 | 4.196E-03 | 3.327E-02 | 2.007E-06 | 1.294E-04 | 7.553E-05 |
| 210 | 216-T-21 | 3.707E-03 | 4.766E-05 | 1.567E-05 | 2.176E-03 | 2.109E-04 | 1.565E-06 | 2.170E+00 | 2.171E+00 | 1.946E-03 | 1.707E-03 | 1.190E-04 | 1.626E-12 | 9.642E-05 | 3.510E-06 | 6.078E-06 | 1.036E-06 | 3.993E-09 | 2.723E-01 | 2.572E-01 | 1.266E-01 | 8.781E-06 | 5.381E-04 | 2.597E-04 |
| 211 | 216-T-22 | 1.233E-02 | 1.585E-04 | 5.214E-05 | 7.238E-03 | 7.016E-04 | 5.204E-06 | 7.218E+00 | 7.220E+00 | 6.474E-03 | 5.679E-03 | 3.957E-04 | 5.410E-12 | 3.207E-04 | 1.167E-05 | 2.022E-05 | 3.445E-06 | 1.328E-08 | 9.058E-01 | 8.553E-01 | 4.210E-01 | 2.921E-05 | 1.790E-03 | 8.639E-04 |
| 212 | 216-T-23 | 1.190E-02 | 1.530E-04 | 5.031E-05 | 6.984E-03 | 6.770E-04 | 5.022E-06 | 6.965E+00 | 6.967E+00 | 6.247E-03 | 5.480E-03 | 3.819E-04 | 5.220E-12 | 3.095E-04 | 1.127E-05 | 1.951E-05 | 3.324E-06 | 1.281E-08 | 8.740E-01 | 8.253E-01 | 4.063E-01 | 2.818E-05 | 1.727E-03 | 8.336E-04 |
| 213 | 216-T-24 | 1.233E-02 | 1.585E-04 | 5.214E-05 | 7.238E-03 | 7.016E-04 | 5.204E-06 | 7.218E+00 | 7.220E+00 | 6.474E-03 | 5.679E-03 | 3.957E-04 | 5.410E-12 | 3.207E-04 | 1.167E-05 | 2.022E-05 | 3.445E-06 | 1.328E-08 | 9.058E-01 | 8.553E-01 | 4.210E-01 | 2.921E-05 | 1.790E-03 | 8.639E-04 |
| 214 | 216-T-25 | 2.391E-02 | 3.075E-04 | 1.011E-04 | 1.404E-02 | 1.361E-03 | 1.009E-05 | 1.400E+01 | 1.400E+01 | 1.256E-02 | 1.101E-02 | 7.676E-04 | 1.049E-11 | 6.221E-04 | 2.264E-05 | 3.921E-05 | 6.682E-06 | 2.576E-08 | 1.757E+00 | 1.659E+00 | 8.167E-01 | 5.665E-05 | 3.471E-03 | 1.676E-03 |
| 215 | 216-T-26 | 5.046E-03 | 5.533E-03 | 9.272E-03 | 8.362E-01 | 1.432E-03 | 4.439E-05 | 2.659E+02 | 2.660E+02 | 8.811E-01 | 7.570E-01 | 3.183E-03 | 2.414E-10 | 1.544E-03 | 1.134E-04 | 1.598E-04 | 3.063E-05 | 4.651E-06 | 3.044E+02 | 2.874E+02 | 4.013E+00 | 8.443E-05 | 9.268E-03 | 1.302E-02 |
| 219 | 216-T-3 | 5.120E-09 | 1.101E-05 | 2.879E-06 | 2.459E-04 | 5.815E-06 | 4.939E-07 | 1.782E-03 | 1.782E-03 | 0.000E | | | | | | | | | | | | | | |

ECF-HANFORD-20-0072, REV. 0

| Site_ID | Site_Name | H-3 | C-14 | Ni-59 | Ni-63 | Co-60 | Se-79 | Sr-90 | Y-90 | Zr-93 | Nb-93m | Tc-99 | Ru-106 | Cd-113m | Sb-125 | Sn-126 | I-129 | Cs-134 | Cs-137 | Ba-137m | Sm-151 | Eu-152 | Eu-154 | Eu-155 |
|---------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|
| 166 | 216-C-5 | 0.000E+00 |
| 335 | UPR-200-W-102 | 1.625E-07 | 6.557E-06 | 1.711E-06 | 1.515E-04 | 6.625E-06 | 2.969E-07 | 1.196E-03 | 1.196E-03 | 0.000E+00 | 0.000E+00 | 6.012E-07 | 1.088E-12 | 9.913E-06 | 4.226E-07 | 1.140E-06 | 0.000E+00 | 1.976E-11 | 1.389E-03 | 1.312E-03 | 2.044E-01 | 1.187E-05 | 7.802E-04 | 4.512E-04 |
| 225 | 216-T-4A | 5.025E-07 | 5.000E-09 | 4.469E-08 | 4.349E-06 | 3.405E-08 | 1.969E-10 | 2.450E-04 | 2.451E-04 | 1.166E-08 | 8.651E-09 | 8.380E-08 | 2.425E-12 | 1.780E-08 | 1.696E-08 | 8.519E-10 | 0.000E+00 | 2.837E-09 | 2.885E-04 | 2.725E-04 | 7.922E-06 | 5.990E-09 | 3.907E-07 | 1.448E-07 |
| 187 | 216-S-20 | 1.539E-04 | 1.554E-06 | 1.317E-05 | 1.278E-03 | 1.077E-05 | 5.881E-08 | 7.364E-02 | 7.366E-02 | 3.482E-06 | 2.592E-06 | 2.493E-05 | 7.684E-10 | 5.484E-06 | 6.048E-06 | 2.554E-07 | 0.000E+00 | 9.590E-07 | 8.682E-02 | 8.199E-02 | 2.284E-03 | 1.686E-06 | 1.208E-04 | 4.469E-05 |
| 195 | 216-S-5 | 6.006E-04 | 3.245E-05 | 1.522E-04 | 1.375E-02 | 4.530E-05 | 1.496E-06 | 4.161E+01 | 4.162E+01 | 8.919E-05 | 7.667E-05 | 5.666E-04 | 1.902E-12 | 6.395E-05 | 4.316E-06 | 6.188E-06 | 9.204E-07 | 1.119E-07 | 1.612E+00 | 1.522E+00 | 6.167E-02 | 8.264E-06 | 5.136E-04 | 1.822E-04 |
| 196 | 216-S-6 | 0.000E+00 |
| 201 | 216-T-12 | 4.170E-05 | 5.369E-07 | 1.766E-07 | 2.451E-05 | 2.365E-06 | 1.763E-08 | 2.443E-02 | 2.444E-02 | 2.193E-05 | 1.924E-05 | 1.340E-06 | 1.801E-14 | 1.086E-06 | 3.919E-08 | 6.849E-08 | 1.167E-08 | 4.462E-11 | 3.066E-03 | 2.896E-03 | 1.425E-03 | 9.806E-08 | 6.033E-06 | 2.907E-06 |
| 216 | 216-T-27 | 6.322E-05 | 6.371E-07 | 5.425E-06 | 5.263E-04 | 4.412E-06 | 2.422E-08 | 3.030E-02 | 3.031E-02 | 1.434E-06 | 1.068E-06 | 1.026E-05 | 3.113E-10 | 2.253E-06 | 2.467E-06 | 1.051E-07 | 0.000E+00 | 3.902E-07 | 3.572E-02 | 3.373E-02 | 9.405E-04 | 6.907E-07 | 4.947E-05 | 1.830E-05 |
| 217 | 216-T-28 | 2.371E-03 | 2.389E-05 | 2.035E-04 | 1.974E-02 | 1.655E-04 | 9.081E-07 | 1.136E+00 | 1.136E+00 | 5.376E-05 | 4.005E-05 | 3.849E-04 | 1.167E-08 | 8.448E-05 | 9.253E-05 | 3.942E-06 | 0.000E+00 | 1.463E-05 | 1.339E+00 | 1.265E+00 | 3.527E-02 | 2.590E-05 | 1.855E-03 | 6.864E-04 |
| 221 | 216-T-33 | 1.818E-04 | 1.865E-06 | 1.745E-05 | 1.678E-03 | 1.147E-05 | 7.603E-08 | 9.186E-02 | 9.188E-02 | 4.505E-06 | 3.406E-06 | 3.233E-05 | 4.814E-10 | 6.489E-06 | 5.228E-06 | 3.280E-07 | 0.000E+00 | 7.347E-07 | 1.083E-01 | 1.023E-01 | 2.981E-03 | 1.793E-06 | 1.271E-04 | 4.703E-05 |
| 222 | 216-T-34 | 5.457E-04 | 5.992E-06 | 5.031E-05 | 4.925E-03 | 3.605E-05 | 2.190E-07 | 2.696E-01 | 2.696E-01 | 1.295E-05 | 9.714E-06 | 9.376E-05 | 1.610E-09 | 1.942E-05 | 1.775E-05 | 9.475E-07 | 0.000E+00 | 2.947E-06 | 3.187E-01 | 3.010E-01 | 9.045E-03 | 6.170E-06 | 4.404E-04 | 1.595E-04 |
| 224 | 216-T-36 | 1.400E-03 | 1.450E-05 | 1.338E-04 | 1.289E-02 | 8.876E-05 | 5.828E-07 | 7.054E-01 | 7.056E-01 | 3.452E-05 | 2.608E-05 | 2.480E-04 | 3.760E-09 | 4.994E-05 | 4.086E-05 | 2.515E-06 | 0.000E+00 | 5.912E-06 | 8.322E-01 | 7.858E-01 | 2.299E-02 | 1.406E-05 | 9.973E-04 | 3.680E-04 |
| 229 | 216-T-8 | 2.516E-04 | 4.979E-05 | 1.292E-06 | 1.145E-04 | 5.118E-06 | 2.241E-07 | 9.938E+00 | 9.941E+00 | 6.006E-08 | 5.250E-08 | 1.084E-04 | 1.996E-16 | 7.508E-06 | 3.331E-07 | 8.598E-07 | 1.234E-07 | 3.709E-09 | 2.511E-01 | 2.371E-01 | 8.358E-03 | 5.052E-07 | 3.253E-05 | 1.900E-05 |
| 232 | 216-U-12 | 2.052E-05 | 8.271E-09 | 4.106E-06 | 3.512E-04 | 6.568E-07 | 1.409E-06 | 1.464E+01 | 1.465E+01 | 3.753E-05 | 2.914E-05 | 1.591E-04 | 5.796E-11 | 7.643E-05 | 3.861E-05 | 4.621E-06 | 1.501E-08 | 1.227E-06 | 7.702E-01 | 7.273E-01 | 1.609E-02 | 4.681E-06 | 1.899E-04 | 7.055E-05 |
| 233 | 216-U-13 | 1.967E-06 | 3.893E-07 | 1.010E-08 | 8.954E-07 | 3.997E-08 | 1.752E-09 | 7.770E-02 | 7.771E-02 | 4.696E-10 | 4.105E-10 | 8.477E-07 | 1.554E-18 | 5.870E-08 | 2.600E-09 | 6.723E-09 | 9.647E-10 | 2.895E-11 | 1.963E-03 | 1.854E-03 | 6.534E-05 | 3.942E-09 | 2.541E-07 | 1.483E-07 |
| 241 | 216-U-5 | 0.000E+00 |
| 242 | 216-U-6 | 0.000E+00 |
| 265 | 216-Z-7 | 1.700E-03 | 1.746E-05 | 1.633E-04 | 1.570E-02 | 1.072E-04 | 7.114E-07 | 8.592E-01 | 8.594E-01 | 4.215E-05 | 3.188E-05 | 3.025E-04 | 4.501E-09 | 6.068E-05 | 4.879E-05 | 3.069E-06 | 0.000E+00 | 6.856E-06 | 1.013E+00 | 9.569E-01 | 2.790E-02 | 1.676E-05 | 1.187E-03 | 4.395E-04 |
| Site_ID | Site_Name | Ra-226 | Ra-228 | Ac-227 | Pa-231 | Th-229 | Th-232 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Np-237 | Pu-238 | Pu-239 | Pu-240 | Pu-241 | Pu-242 | Am-241 | Am-243 | Cm-242 | Cm-243 | Cm-244 |
| 108 | 216-B-20 | 3.656E-08 | 1.390E-13 | 1.777E-07 | 1.951E-07 | 1.305E-11 | 1.105E-13 | 1.775E-08 | 1.435E-09 | 1.822E-03 | 8.274E-05 | 1.629E-05 | 1.851E-03 | 1.696E-05 | 5.902E-04 | 7.219E-02 | 8.081E-03 | 1.969E-02 | 1.649E-07 | 1.247E-03 | 2.250E-07 | 3.852E-07 | 5.007E-09 | 1.175E-07 |
| 116 | 216-B-26 | 1.588E-08 | 6.098E-14 | 7.906E-08 | 6.927E-10 | 2.903E-12 | 2.468E-14 | 3.289E-08 | 2.659E-09 | 3.375E-03 | 1.533E-04 | 3.017E-05 | 3.430E-03 | 7.594E-06 | 4.748E-04 | 6.124E-02 | 6.599E-03 | 1.537E-02 | 1.269E-07 | 5.337E-04 | 1.019E-07 | 1.744E-07 | 2.265E-09 | 5.311E-08 |
| 146 | 216-B-53A | 4.253E-12 | 4.853E-09 | 1.152E-08 | 1.801E-08 | 3.271E-09 | 3.832E-09 | 2.663E-03 | 1.438E-01 | 1.393E-02 | 5.431E-04 | 5.935E-04 | 9.345E-03 | 5.501E-08 | 2.382E-01 | 2.162E+00 | 8.072E-01 | 1.627E+01 | 1.706E-04 | 1.007E-04 | 1.165E-07 | 1.909E-07 | 2.347E-08 | 5.819E-07 |
| 147 | 216-B-53B | 1.236E-12 | 1.411E-09 | 3.350E-09 | 5.235E-09 | 9.509E-10 | 1.114E-09 | 7.740E-04 | 4.180E-02 | 4.049E-03 | 1.579E-04 | 1.725E-04 | 2.717E-03 | 1.599E-08 | 6.923E-02 | 6.285E-01 | 2.347E-01 | 4.729E+00 | 4.958E-05 | 2.928E-05 | 3.388E-08 | 5.549E-08 | 6.822E-09 | 1.692E-07 |
| 148 | 216-B-54 | 1.236E-12 | 1.411E-09 | 3.350E-09 | 5.235E-09 | 9.509E-10 | 1.114E-09 | 7.740E-04 | 4.180E-02 | 4.049E-03 | 1.579E-04 | 1.725E-04 | 2.717E-03 | 1.599E-08 | 6.923E-02 | 6.285E-01 | 2.347E-01 | 4.729E+00 | 4.958E-05 | 2.928E-05 | 3.388E-08 | 5.549E-08 | 6.822E-09 | 1.692E-07 |
| 151 | 216-B-58 | 9.891E-13 | 1.129E-09 | 2.680E-09 | 4.188E-09 | 7.607E-10 | 8.911E-10 | 6.192E-04 | 3.344E-02 | 3.239E-03 | 1.263E-04 | 1.380E-04 | 2.173E-03 | 1.279E-08 | 5.538E-02 | 5.028E-01 | 1.877E-01 | 3.783E+00 | 3.967E-05 | 2.343E-05 | 2.710E-08 | 4.439E-08 | 5.457E-09 | 1.353E-07 |
| 154 | 216-B-60 | 2.882E-13 | 2.553E-10 | 7.312E-10 | 1.135E-09 | 1.563E-10 | 2.017E-10 | 1.294E-04 | 6.810E-03 | 5.036E-04 | 2.026E-05 | 2.525E-05 | 3.464E-04 | 2.631E-09 | 1.426E-02 | 1.285E-01 | 3.763E-02 | 8.542E-01 | 9.301E-06 | 5.034E-06 | 7.088E-09 | 1.116E-08 | 1.644E-09 | 4.020E-08 |
| 330 | UPR-200-E-87 | 1.330E-09 | 4.525E-15 | 5.653E-08 | 1.188E-06 | 4.491E-11 | 3.751E-13 | 6.230E-13 | 5.501E-14 | 6.948E-08 | 3.137E-09 | 6.058E-10 | 7.066E-08 | 4.480E-06 | 1.339E-02 | 2.952E+00 | 2.332E-01 | 3.093E-01 | 2.008E-06 | 1.524E-04 | 1.155E-08 | 2.011E-08 | 1.529E-10 | 3.471E-09 |
| 73 | 216-A-25 | 1.394E-10 | 1.074E-15 | 6.464E-10 | 9.754E-10 | 9.405E-13 | 1.112E-15 | 5.635E-09 | 7.188E-09 | 7.183E-05 | 3.078E-06 | 1.613E-06 | 7.389E-05 | 2.894E-06 | 8.183E-04 | 1.428E-02 | 4.063E-03 | 3.783E-02 | 3.518E-07 | 7.268E-02 | 5.088E-05 | 8.388E-05 | 6.529E-06 | 1.490E-04 |
| 184 | 216-S-16P | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 1.861E-06 | 1.011E-07 | 1.182E-01 | 5.227E-03 | 1.612E-03 | 1.179E-01 | 0.000E+00 |
| 185 | 216-S-17 | 7.798E-12 | 5.016E-17 | 3.285E-11 | 4.798E-11 | 1.581E-13 | 5.324E-17 | 5.467E-10 | 2.157E-09 | 1.255E-05 | 5.389E-07 | 2.803E-07 | 1.287E-05 | 3.612E-07 | 3.753E-05 | 1.477E-03 | 3.419E-04 | 1.452E-03 | 1.536E-08 | 1.269E-03 | 4.545E-07 | 3.705E-08 | 8.300E-10 | 2.007E-08 |
| 126 | 216-B-35 | 1.430E-08 | 7.607E-14 | 4.451E-08 | 9.906E-07 | 5.257E-11 | 4.453E-13 | 1.882E-08 | 1.410E-09 | 1.332E-03 | 5.970E-05 | 1.540E-05 | 1.356E-03 | 6.255E-06 | 4.156E-03 | 3.758E-01 | 5.322E-02 | 1.468E-01 | 1.309E-06 | 8.914E-04 | 1.387E-07 | 2.372E-07 | 3.161E-09 | 7.406E-08 |
| 127 | 216-B-36 | 2.616E-08 | 1.392E-13 | 8.147E-08 | 1.813E-06 | 9.621E-11 | 8.149E-13 | 3.444E-08 | 2.581E-09 | 2.438E-03 | 1.093E-04 | 2.819E-05 | 2.483E-03 | 1.145E-05 | 7.605E-03 | 6.878E-01 | 9.740E-02 | 2.687E-01 | 2.396E-06 | 1.631E-03 | 2.538E-07 | 4.341E-07 | 5.784E-09 | 1.355E-07 |
| 128 | 216-B-37 | 5.826E-08 | 3.100E-13 | 1.814E-07 | 4.037E-06 | 2.142E-10 | 1.815E-12 | 7.669E-08 | 5.746E-09 | 5.428E-03 | 2.433E-04 | 6.278E-05 | 5.528E-03 | 2.549E-05 | 1.694E-02 | 1.532E+00 | 2.169E-01 | 5.984E-01 | 5.336E-06 | 3.633E-03 | 5.653E-07 | 9.667E-07 | 1.288E-08 | 3.018E-07 |
| 129 | 216-B-38 | 1.929E-08 | 1.026E-13 | 6.005E-08 | 1.336E-06 | 7.092E-11 | 6.007E-13 | 2.538E-08 | 1.902E-09 | 1.797E-03 | 8.054E-05 | 2.078E-05 | 1.830E-03 | 8.439E-06 | 5.606E-03 | 5.070E-01 | 7.180E-02 | 1.981E-01 | 1.766E-06 | 1.202E-03 | 1.871E-07 | 3.200E-07 | 4.264E-09 | 9.991E-08 |
| 130 | 216-B-39 | 1.469E-08 | 7.816E-14 | 4.573E-08 | 1.018E-06 | 5.401E-11 | 4.575E-13 | 1.933E-08 | 1.449E-09 | 1.368E-03 | 6.134E-05 | 1.583E-05 | 1.394E-03 | 6.427E-06 | 4.269E-03 | 3.861E-01 | 5.468E-02 | 1.508E-01 | 1.345E-06 | 9.158E-04 | 1.425E-07 | 2.437E-07 | 3.247E-09 | 7.609E-08</ |

ECF-HANFORD-20-0072, REV. 0

| Site_ID | Site_Name | Ra-226 | Ra-228 | Ac-227 | Pa-231 | Th-229 | Th-232 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Np-237 | Pu-238 | Pu-239 | Pu-240 | Pu-241 | Pu-242 | Am-241 | Am-243 | Cm-242 | Cm-243 | Cm-244 |
|---------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 220 | 216-T-32 | 7.409E-10 | 3.152E-15 | 3.240E-08 | 7.155E-07 | 3.121E-11 | 2.651E-13 | 5.089E-13 | 4.080E-14 | 4.598E-08 | 2.072E-09 | 4.626E-10 | 4.678E-08 | 3.529E-06 | 1.926E-02 | 2.220E+00 | 2.599E-01 | 6.509E-01 | 5.528E-06 | 2.832E-04 | 5.796E-08 | 9.921E-08 | 1.310E-09 | 3.072E-08 |
| 226 | 216-T-5 | 8.143E-09 | 3.943E-14 | 7.297E-08 | 1.665E-06 | 7.796E-11 | 6.668E-13 | 1.803E-10 | 1.404E-11 | 1.514E-05 | 6.819E-07 | 1.608E-07 | 1.541E-05 | 9.223E-06 | 7.353E-03 | 7.636E-01 | 9.672E-02 | 2.537E-01 | 2.171E-06 | 8.228E-04 | 1.720E-07 | 2.943E-07 | 3.896E-09 | 9.136E-08 |
| 227 | 216-T-6 | 3.092E-10 | 1.079E-15 | 1.311E-08 | 2.746E-07 | 1.075E-11 | 8.945E-14 | 1.500E-13 | 1.318E-14 | 1.597E-08 | 7.216E-10 | 1.446E-10 | 1.624E-08 | 1.078E-06 | 4.183E-03 | 7.015E-01 | 6.716E-02 | 1.055E-01 | 7.362E-07 | 5.174E-05 | 4.330E-09 | 7.541E-09 | 5.855E-11 | 1.326E-09 |
| 228 | 216-T-7 | 4.251E-08 | 1.919E-13 | 3.804E-07 | 8.506E-06 | 3.853E-10 | 3.283E-12 | 8.528E-10 | 6.744E-11 | 7.406E-05 | 3.336E-06 | 7.680E-07 | 7.536E-05 | 4.455E-05 | 5.693E-02 | 5.932E+00 | 7.508E-01 | 1.960E+00 | 1.672E-05 | 3.753E-03 | 7.735E-07 | 1.324E-06 | 1.749E-08 | 4.101E-07 |
| 55 | 216-A-1 | 0.000E+00 | 5.617E-07 | 4.019E-08 | 4.469E-02 | 2.004E-03 | 5.903E-04 | 4.556E-02 | 0.000E+00 |
| 64 | 216-A-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 2.786E-06 | 1.993E-07 | 2.216E-01 | 9.937E-03 | 2.927E-03 | 2.260E-01 | 0.000E+00 |
| 65 | 216-A-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 1.567E-04 | 1.099E-05 | 1.286E+01 | 5.777E-01 | 1.693E-01 | 1.311E+01 | 0.000E+00 |
| 67 | 216-A-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 2.596E-06 | 1.860E-07 | 2.061E-01 | 9.241E-03 | 2.723E-03 | 2.102E-01 | 0.000E+00 |
| 76 | 216-A-27 | 6.050E-12 | 6.596E-09 | 1.630E-08 | 2.540E-08 | 4.322E-09 | 5.214E-09 | 3.407E-03 | 1.889E-01 | 1.705E-02 | 6.633E-04 | 7.308E-04 | 1.144E-02 | 7.248E-08 | 3.122E-01 | 2.814E+00 | 1.032E+00 | 2.047E+01 | 2.078E-04 | 1.314E-04 | 1.448E-07 | 2.381E-07 | 2.851E-08 | 7.053E-07 |
| 77 | 216-A-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 3.285E-06 | 1.916E-07 | 2.214E-01 | 1.002E-02 | 2.698E-03 | 2.353E-01 | 0.000E+00 |
| 79 | 216-A-30 | 2.786E-11 | 2.694E-08 | 7.119E-08 | 1.066E-07 | 1.679E-08 | 2.098E-08 | 1.387E-02 | 7.315E-01 | 5.484E-02 | 2.141E-03 | 2.433E-03 | 3.722E-02 | 2.794E-07 | 1.382E+00 | 1.127E+01 | 3.901E+00 | 9.417E+01 | 1.056E-03 | 7.264E-04 | 9.590E-07 | 1.542E-06 | 2.269E-07 | 5.418E-06 |
| 88 | 216-A-4 | 1.732E-12 | 1.853E-09 | 4.657E-09 | 7.250E-09 | 1.198E-09 | 1.465E-09 | 9.292E-04 | 5.222E-02 | 4.534E-03 | 1.761E-04 | 1.949E-04 | 3.043E-03 | 2.007E-08 | 8.621E-02 | 7.741E-01 | 2.812E-01 | 5.530E+00 | 5.509E-05 | 3.618E-05 | 3.883E-08 | 6.402E-08 | 7.541E-09 | 1.863E-07 |
| 93 | 216-A-6 | 3.808E-13 | 3.678E-10 | 9.951E-10 | 1.543E-09 | 2.384E-10 | 2.906E-10 | 2.041E-04 | 1.038E-02 | 8.988E-04 | 3.543E-05 | 3.941E-05 | 6.165E-04 | 3.981E-09 | 1.938E-02 | 1.690E-01 | 5.698E-02 | 1.193E+00 | 1.250E-05 | 7.428E-06 | 9.340E-09 | 1.503E-08 | 2.065E-09 | 5.036E-08 |
| 96 | 216-A-9 | 4.789E-10 | 4.551E-07 | 1.284E-06 | 1.966E-06 | 3.347E-07 | 3.589E-07 | 3.507E-01 | 1.449E+01 | 1.504E+00 | 5.942E-02 | 5.754E-02 | 1.064E+00 | 5.452E-06 | 2.679E+01 | 1.982E+02 | 8.074E+01 | 1.600E+03 | 1.655E-02 | 1.037E-02 | 1.309E-05 | 2.140E-05 | 3.006E-06 | 7.162E-05 |
| 100 | 216-B-12 | 5.242E-08 | 2.534E-13 | 1.455E-07 | 1.585E-10 | 8.028E-13 | 6.866E-15 | 5.438E-07 | 4.234E-08 | 4.576E-02 | 2.061E-02 | 4.848E-04 | 4.656E-02 | 2.216E-06 | 2.562E-05 | 2.659E-03 | 3.368E-04 | 8.844E-04 | 7.575E-09 | 1.980E-04 | 4.145E-08 | 7.094E-08 | 9.394E-10 | 2.203E-08 |
| 161 | 216-C-1 | 1.316E-12 | 1.087E-09 | 2.687E-09 | 4.188E-09 | 7.125E-10 | 8.595E-10 | 5.617E-04 | 3.114E-02 | 6.185E-02 | 2.771E-03 | 8.258E-04 | 6.303E-02 | 3.364E-08 | 5.147E-02 | 4.640E-01 | 1.701E-01 | 3.374E+00 | 3.426E-05 | 3.957E-04 | 2.288E-07 | 2.095E-05 | 1.243E-06 | 2.967E-05 |
| 166 | 216-C-5 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 7.006E-08 | 4.906E-09 | 5.754E-03 | 2.584E-04 | 7.572E-05 | 5.866E-03 | 0.000E+00 |
| 335 | UPR-200-W-102 | 1.253E-09 | 6.280E-15 | 5.586E-08 | 1.274E-06 | 6.214E-11 | 5.310E-13 | 1.067E-12 | 8.320E-14 | 8.601E-08 | 3.865E-09 | 9.510E-10 | 8.756E-08 | 7.329E-06 | 4.245E-02 | 4.467E+00 | 5.659E-01 | 1.445E+00 | 1.215E-05 | 6.280E-04 | 1.272E-07 | 2.177E-07 | 2.863E-09 | 6.715E-08 |
| 225 | 216-T-4A | 1.784E-14 | 1.691E-11 | 4.565E-11 | 6.919E-11 | 1.059E-11 | 1.323E-11 | 8.875E-06 | 4.613E-04 | 3.556E-05 | 1.398E-06 | 1.602E-06 | 2.429E-05 | 1.765E-10 | 8.893E-04 | 7.456E-03 | 2.488E-03 | 5.823E-02 | 6.448E-07 | 4.226E-07 | 5.608E-10 | 8.997E-10 | 1.318E-10 | 3.162E-09 |
| 187 | 216-S-20 | 4.786E-12 | 5.237E-09 | 1.290E-08 | 2.011E-08 | 3.439E-09 | 4.139E-09 | 2.719E-03 | 1.504E-01 | 1.367E-02 | 5.316E-04 | 5.853E-04 | 9.170E-03 | 5.769E-08 | 2.486E-01 | 2.242E+00 | 8.235E-01 | 1.636E+01 | 1.666E-04 | 1.047E-04 | 1.159E-07 | 1.905E-07 | 2.286E-08 | 5.657E-07 |
| 195 | 216-S-5 | 9.004E-11 | 5.792E-16 | 3.793E-10 | 5.540E-10 | 1.826E-12 | 6.147E-16 | 2.454E-06 | 1.266E-07 | 1.430E-01 | 6.309E-03 | 2.216E-03 | 1.466E-01 | 4.170E-06 | 4.333E-04 | 1.706E-02 | 3.948E-03 | 1.677E-02 | 1.773E-07 | 1.465E-02 | 5.248E-06 | 4.278E-07 | 9.583E-09 | 2.318E-07 |
| 196 | 216-S-6 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 1.901E-06 | 9.617E-08 | 1.108E-01 | 4.889E-03 | 1.717E-03 | 1.136E-01 | 0.000E+00 |
| 201 | 216-T-12 | 6.985E-11 | 3.745E-16 | 2.173E-10 | 4.833E-09 | 2.588E-13 | 2.192E-15 | 9.258E-11 | 6.940E-12 | 6.497E-06 | 2.911E-07 | 7.579E-08 | 6.617E-06 | 3.078E-08 | 2.031E-05 | 1.842E-03 | 2.609E-04 | 7.157E-04 | 6.359E-09 | 4.349E-06 | 6.724E-10 | 1.150E-09 | 1.530E-11 | 3.586E-10 |
| 216 | 216-T-27 | 1.976E-12 | 2.154E-09 | 5.323E-09 | 8.296E-09 | 1.412E-09 | 1.703E-09 | 1.113E-03 | 6.170E-02 | 5.570E-03 | 2.166E-04 | 2.387E-04 | 3.738E-03 | 2.367E-08 | 1.020E-01 | 9.189E-01 | 3.370E-01 | 6.685E+00 | 6.788E-05 | 4.291E-05 | 4.729E-08 | 7.777E-08 | 9.311E-09 | 2.304E-07 |
| 217 | 216-T-28 | 7.409E-11 | 8.079E-08 | 1.996E-07 | 3.111E-07 | 5.293E-08 | 6.386E-08 | 4.173E-02 | 2.314E+00 | 2.089E-01 | 8.124E-03 | 8.951E-03 | 1.402E-01 | 8.877E-07 | 3.824E+00 | 3.446E+01 | 1.264E+01 | 2.507E+02 | 2.546E-03 | 1.609E-03 | 1.773E-06 | 2.917E-06 | 3.491E-07 | 8.638E-06 |
| 221 | 216-T-33 | 6.097E-12 | 5.885E-09 | 1.633E-08 | 2.509E-08 | 4.157E-09 | 4.647E-09 | 4.123E-03 | 1.798E-01 | 1.770E-02 | 6.971E-04 | 6.884E-04 | 1.245E-02 | 6.804E-08 | 3.255E-01 | 2.493E+00 | 9.857E-01 | 1.938E+01 | 1.966E-04 | 1.276E-04 | 1.546E-07 | 2.533E-07 | 3.476E-08 | 8.297E-07 |
| 222 | 216-T-34 | 2.135E-11 | 1.891E-08 | 5.416E-08 | 8.410E-08 | 1.158E-08 | 1.494E-08 | 9.582E-03 | 5.045E-01 | 3.730E-02 | 1.500E-03 | 1.870E-03 | 2.566E-02 | 1.949E-07 | 1.056E+00 | 9.517E+00 | 2.787E+00 | 6.327E+01 | 6.890E-04 | 3.729E-04 | 5.250E-07 | 8.268E-07 | 1.218E-07 | 2.978E-06 |
| 224 | 216-T-36 | 4.794E-11 | 4.564E-08 | 1.274E-07 | 1.959E-07 | 3.175E-08 | 3.604E-08 | 3.109E-02 | 1.375E+00 | 1.325E-01 | 5.227E-03 | 5.256E-03 | 9.315E-02 | 5.212E-07 | 2.537E+00 | 1.991E+01 | 7.549E+00 | 1.512E+02 | 1.552E-03 | 9.802E-04 | 1.215E-06 | 1.979E-06 | 2.748E-07 | 6.585E-06 |
| 229 | 216-T-8 | 1.472E-08 | 7.116E-14 | 4.085E-08 | 4.452E-11 | 2.254E-13 | 1.928E-15 | 1.527E-07 | 1.189E-08 | 1.285E-02 | 5.787E-04 | 1.362E-04 | 1.308E-02 | 6.222E-07 | 7.194E-06 | 7.466E-04 | 9.457E-05 | 2.484E-04 | 2.127E-09 | 5.561E-05 | 1.164E-08 | 1.992E-08 | 2.638E-10 | 6.186E-09 |
| 232 | 216-U-12 | 4.197E-09 | 2.001E-05 | 1.307E-03 | 9.631E-05 | 3.384E-04 | 3.770E-04 | 1.522E-03 | 9.628E-02 | 7.306E-04 | 2.592E-09 | 4.518E-10 | 4.043E-17 | 1.768E-11 | 3.025E-09 | 1.526E-13 | 1.049E-14 | 4.164E-14 | 8.584E-20 | 5.801E-15 | 2.080E-20 | 1.117E-20 | 8.014E-22 | 1.760E-20 |
| 233 | 216-U-13 | 1.149E-10 | 5.564E-16 | 3.188E-10 | 3.474E-13 | 1.763E-15 | 1.508E-17 | 1.194E-09 | 9.297E-11 | 1.003E-04 | 4.515E-06 | 1.065E-06 | 1.020E-04 | 4.865E-09 | 5.616E-08 | 5.832E-06 | 7.388E-07 | 1.938E-06 | 1.658E-11 | 4.340E-07 | 9.071E-11 | 1.552E-10 | 2.055E-12 | 4.819E-11 |
| 241 | 216-U-5 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 2.355E-06 | 1.685E-07 | 1.873E-01 | 8.400E-03 | 2.474E-03 | 1.910E-01 | 0.000E+00 |
| 242 | 216-U-6 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 2.355E-06 | 1.685E-07 | 1.873E-01 | 8.400E-03 | 2.474E-03 | 1.910E-01 | 0.000E+00 |
| 265 | 216-Z-7 | 5.698E-11 | 5.494E-08 | 1.526E-07 | 2.344E-07 | 3.891E-08 | 4.338E-08 | 3.874E-02 | 1.683E+00 | 1.662E-01 | 6.550E-03 | 6.459E-03 | 1.170E-01 | 6.366E-07 | 3.051E+00 | 2.331E+01 | 9.236E+00 | 1.817E+02 | 1.846E-03 | 1.195E-03 | 1.452E-06 | 2.379E-06 | 3.269E-07 | 7.803E-06 |

* - The 241-BX-102 results were removed from the SIM Solids output, and they were allocated to the liquids only.

7.2 Regrow (Back Decay) of Radionuclides

The SIM-v2 generated radionuclide inventories for the entrained solids are presented using the decay date of January 1, 2001 to be consistent with the previous results even though the actual release events occurred at various dates in 1944 through 2000. However, contaminant transport modeling and calculations frequently need radionuclide inventories at the time of the release events. Therefore, the radionuclide inventories generated by SIM-v2 need to be regrown (or back decayed) to the year of release for each waste site.

By using the calculation approach described in ECF-HANFORD-17-0079 (Section 3.5 and Appendix D) the back decay calculations were performed for the radionuclide inventories for the entrained solids at 70 waste sites.

The following are the basic equations for ingrowth (regrown decay) calculations.

For radioactive parent element E_1 decaying to radioactive daughter element E_2 , denote the decay rates

$$\lambda_1 = \text{decay rate of element 1 [1/time]},$$

$$\lambda_2 = \text{decay rate of element 2 [1/time]},$$

and corresponding $\frac{1}{2}$ -lives [time]

$$t_{1/2}^1 = \frac{\ln(2)}{\lambda_1},$$

$$t_{1/2}^2 = \frac{\ln(2)}{\lambda_2}.$$

The differential equations modeling 2nd order decay with ingrowth to decaying daughter is

$$\frac{dN_1}{dt} = -\lambda_1 N_1, \tag{Eq. 1}$$

$$\frac{dN_2}{dt} = -\lambda_2 N_2 + \lambda_1 N_1, \tag{Eq. 2}$$

where

$$N_1 = \text{number of radioactive nuclei of element } E_1,$$

$$N_2 = \text{number of radioactive nuclei of element } E_2.$$

Assume the solutions have initial conditions at time t_0

$$N_1(t_0) = N_1^0,$$

$$N_2(t_0) = N_2^0.$$

The solution is required at time $t = t_0 + \Delta t$ with time change $t - t_0 = \Delta t$. Eq. 1 is separable with solution

$$N_1(t) = N_1^0 \exp(-\lambda_1 \Delta t). \tag{Eq. 3}$$

The differential Eq. 2 is written

$$\frac{dN_2}{dt} = -\lambda_2 N_2 + \lambda_1 N_1^0 \exp(-\lambda_1 \Delta t), \tag{Eq. 4}$$

which is first order linear. The solution can be expressed as a variational function multiplied by the homogeneous solution

$$N_2(t) = v(t) \exp(-\lambda_2 \Delta t). \quad \text{Eq. 5}$$

Setting the derivative of right-hand side of Eq. 5 equal the right-hand side of Eq. 4 yields

$$\frac{dv}{dt} = \lambda_1 N_1^0 \exp((\lambda_2 - \lambda_1) \Delta t).$$

Integration yields

$$v(t) = \frac{\lambda_1 N_1^0}{\lambda_2 - \lambda_1} e^{(\lambda_2 - \lambda_1)t} + C.$$

The arbitrary constant can be determined from the initial condition $N_2(0) = N_2^0$, which yields

$$C = N_2^0 - \frac{\lambda_1 N_1^0}{\lambda_2 - \lambda_1}.$$

From Eq. 5

$$N_2(t) = \frac{\lambda_1 N_1^0}{\lambda_2 - \lambda_1} [\exp(-\lambda_1 \Delta t) - \exp(-\lambda_2 \Delta t)] + N_2^0 \exp(-\lambda_2 \Delta t). \quad \text{Eq. 6}$$

The activity of an element is $A = \lambda N$, which is the number of disintegrations per unit time. The solutions to the decay equations, Eq. 1 and Eq. 2, can be expressed in terms of activity by multiplication of Eq. 3 by λ_1 and multiplication of Eq. 6 by λ_2 , which yields the following decay equations:

$$A_1(t) = A_1^0 \exp(-\lambda_1 \Delta t), \quad \text{Eq. 7}$$

$$A_2(t) = \frac{\lambda_2 A_1^0}{\lambda_2 - \lambda_1} [\exp(-\lambda_1 \Delta t) - \exp(-\lambda_2 \Delta t)] + A_2^0 \exp(-\lambda_2 \Delta t) \quad \text{Eq. 8}$$

where A_1^0 and A_2^0 are the initial activities at time t_0 .

To regrow the nuclides, use Eqs. 7 and 8 for second order decay with initial time t and regrow to end time t_0 . Then $\Delta t = t_0 - t$ is negative and the activities A_1^0, A_2^0 are interchanged with $A_1(t), A_2(t)$, respectively. For 1st order decay only Eq. 7 is required.

The back-decayed mean inventories and standard deviations for selected radionuclides are presented in Table 7-5 and Table 7-6.

Table 7-5. Mean of Cumulative Inventory of Radionuclides (Ci) for Entrained Solids Back Decayed to the Discharge Year (6 sheets)^a

| Site Name | Discharge/ Decay- Corrected Year | C-14 | H-3 | I-129 | Np-237 | Sr-90 | Tc-99 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Am-241 | Pu-239 |
|-----------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 216-A-1 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.05E-06 | 5.26E-08 | 4.40E-02 | 1.95E-03 | 5.97E-04 | 4.49E-02 | 0.00E+00 | 0.00E+00 |
| 216-A-18 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.23E-06 | 2.61E-07 | 2.18E-01 | 9.65E-03 | 2.96E-03 | 2.22E-01 | 0.00E+00 | 0.00E+00 |
| 216-A-19 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.40E-04 | 1.70E-05 | 1.42E+01 | 6.28E-01 | 1.93E-01 | 1.45E+01 | 0.00E+00 | 0.00E+00 |
| 216-A-20 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.82E-06 | 2.41E-07 | 2.01E-01 | 8.90E-03 | 2.73E-03 | 2.05E-01 | 0.00E+00 | 0.00E+00 |
| 216-A-25 | 1964 | 1.64E-05 | 4.90E-04 | 5.57E-08 | 1.80E-06 | 3.67E+02 | 9.28E-04 | 4.78E-09 | 5.66E-09 | 4.26E-05 | 1.78E-06 | 1.09E-06 | 4.17E-05 | 5.75E-02 | 1.59E-02 |
| 216-A-27 | 1965 | 7.51E-07 | 5.57E-04 | 0.00E+00 | 2.25E-08 | 8.96E-02 | 1.33E-05 | 1.75E-03 | 7.30E-02 | 5.30E-03 | 2.04E-04 | 2.32E-04 | 3.57E-03 | 0.00E+00 | 1.44E+00 |
| 216-A-27 | 1966 | 7.51E-07 | 5.27E-04 | 0.00E+00 | 2.28E-08 | 8.75E-02 | 1.33E-05 | 1.73E-03 | 7.30E-02 | 5.30E-03 | 2.04E-04 | 2.32E-04 | 3.57E-03 | 0.00E+00 | 1.44E+00 |
| 216-A-27 | 1967 | 7.50E-07 | 4.98E-04 | 0.00E+00 | 2.31E-08 | 8.54E-02 | 1.33E-05 | 1.72E-03 | 7.30E-02 | 5.30E-03 | 2.04E-04 | 2.32E-04 | 3.57E-03 | 0.00E+00 | 1.44E+00 |
| 216-A-27 | 1968 | 7.50E-07 | 4.71E-04 | 0.00E+00 | 2.34E-08 | 8.34E-02 | 1.33E-05 | 1.70E-03 | 7.30E-02 | 5.30E-03 | 2.04E-04 | 2.32E-04 | 3.57E-03 | 0.00E+00 | 1.44E+00 |
| 216-A-27 | 1969 | 7.50E-07 | 4.45E-04 | 0.00E+00 | 2.37E-08 | 8.14E-02 | 1.33E-05 | 1.68E-03 | 7.30E-02 | 5.30E-03 | 2.04E-04 | 2.32E-04 | 3.57E-03 | 0.00E+00 | 1.44E+00 |
| 216-A-27 | 1970 | 7.50E-07 | 4.21E-04 | 0.00E+00 | 2.39E-08 | 7.95E-02 | 1.33E-05 | 1.67E-03 | 7.30E-02 | 5.30E-03 | 2.04E-04 | 2.32E-04 | 3.57E-03 | 0.00E+00 | 1.44E+00 |
| 216-A-28 | 1960 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.70E-06 | 2.47E-07 | 2.06E-01 | 9.13E-03 | 2.80E-03 | 2.11E-01 | 0.00E+00 | 0.00E+00 |
| 216-A-30 | 1961 | 5.88E-07 | 5.46E-04 | 0.00E+00 | 1.65E-08 | 7.72E-02 | 1.04E-05 | 1.43E-03 | 5.71E-02 | 4.14E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1962 | 5.88E-07 | 5.16E-04 | 0.00E+00 | 1.68E-08 | 7.54E-02 | 1.04E-05 | 1.41E-03 | 5.71E-02 | 4.14E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1963 | 5.88E-07 | 4.88E-04 | 0.00E+00 | 1.71E-08 | 7.36E-02 | 1.04E-05 | 1.40E-03 | 5.71E-02 | 4.14E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1964 | 5.87E-07 | 4.61E-04 | 0.00E+00 | 1.74E-08 | 7.18E-02 | 1.04E-05 | 1.38E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1965 | 5.87E-07 | 4.36E-04 | 0.00E+00 | 1.76E-08 | 7.01E-02 | 1.04E-05 | 1.37E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1966 | 5.87E-07 | 4.12E-04 | 0.00E+00 | 1.79E-08 | 6.85E-02 | 1.04E-05 | 1.36E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1967 | 5.87E-07 | 3.90E-04 | 0.00E+00 | 1.81E-08 | 6.68E-02 | 1.04E-05 | 1.34E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1968 | 5.87E-07 | 3.68E-04 | 0.00E+00 | 1.83E-08 | 6.52E-02 | 1.04E-05 | 1.33E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1969 | 5.87E-07 | 3.48E-04 | 0.00E+00 | 1.85E-08 | 6.37E-02 | 1.04E-05 | 1.31E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1970 | 5.87E-07 | 3.29E-04 | 0.00E+00 | 1.87E-08 | 6.22E-02 | 1.04E-05 | 1.30E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1971 | 5.87E-07 | 3.11E-04 | 0.00E+00 | 1.89E-08 | 6.07E-02 | 1.04E-05 | 1.29E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1972 | 5.87E-07 | 2.94E-04 | 0.00E+00 | 1.91E-08 | 5.93E-02 | 1.04E-05 | 1.28E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1973 | 5.87E-07 | 2.78E-04 | 0.00E+00 | 1.93E-08 | 5.78E-02 | 1.04E-05 | 1.26E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1976 | 5.87E-07 | 2.35E-04 | 0.00E+00 | 1.98E-08 | 5.38E-02 | 1.04E-05 | 1.23E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1977 | 5.87E-07 | 2.22E-04 | 0.00E+00 | 1.99E-08 | 5.25E-02 | 1.04E-05 | 1.21E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1978 | 5.86E-07 | 2.10E-04 | 0.00E+00 | 2.01E-08 | 5.13E-02 | 1.04E-05 | 1.20E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1979 | 5.86E-07 | 1.98E-04 | 0.00E+00 | 2.02E-08 | 5.01E-02 | 1.04E-05 | 1.19E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1980 | 5.86E-07 | 1.87E-04 | 0.00E+00 | 2.03E-08 | 4.89E-02 | 1.04E-05 | 1.18E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1981 | 5.86E-07 | 1.77E-04 | 0.00E+00 | 2.05E-08 | 4.77E-02 | 1.04E-05 | 1.17E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1982 | 5.86E-07 | 1.68E-04 | 0.00E+00 | 2.06E-08 | 4.66E-02 | 1.04E-05 | 1.15E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1983 | 5.86E-07 | 1.58E-04 | 0.00E+00 | 2.06E-08 | 4.55E-02 | 1.04E-05 | 1.14E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1984 | 5.86E-07 | 1.50E-04 | 0.00E+00 | 2.08E-08 | 4.44E-02 | 1.04E-05 | 1.13E-03 | 5.71E-02 | 4.15E-03 | 1.60E-04 | 1.82E-04 | 2.79E-03 | 0.00E+00 | 1.12E+00 |
| 216-A-30 | 1985 | 1.17E-06 | 2.83E-04 | 0.00E+00 | 4.17E-08 | 8.67E-02 | 2.09E-05 | 2.24E-03 | 1.14E-01 | 8.30E-03 | 3.20E-04 | 3.64E-04 | 5.58E-03 | 0.00E+00 | 2.25E+00 |
| 216-A-30 | 1986 | 1.17E-06 | 2.68E-04 | 0.00E+00 | 4.19E-08 | 8.46E-02 | 2.09E-05 | 2.22E-03 | 1.14E-01 | 8.30E-03 | 3.20E-04 | 3.64E-04 | 5.58E-03 | 0.00E+00 | 2.25E+00 |

ECF-HANFORD-20-0072, REV. 0

| Site Name | Discharge/ Decay- Corrected Year | C-14 | H-3 | I-129 | Np-237 | Sr-90 | Tc-99 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Am-241 | Pu-239 |
|-----------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 216-A-30 | 1987 | 1.17E-06 | 2.53E-04 | 0.00E+00 | 4.21E-08 | 8.26E-02 | 2.09E-05 | 2.20E-03 | 1.14E-01 | 8.30E-03 | 3.20E-04 | 3.64E-04 | 5.58E-03 | 0.00E+00 | 2.25E+00 |
| 216-A-30 | 1988 | 1.17E-06 | 2.39E-04 | 0.00E+00 | 4.23E-08 | 8.06E-02 | 2.09E-05 | 2.17E-03 | 1.14E-01 | 8.31E-03 | 3.20E-04 | 3.64E-04 | 5.58E-03 | 0.00E+00 | 2.25E+00 |
| 216-A-30 | 1989 | 1.17E-06 | 2.26E-04 | 0.00E+00 | 4.25E-08 | 7.87E-02 | 2.09E-05 | 2.15E-03 | 1.14E-01 | 8.31E-03 | 3.20E-04 | 3.64E-04 | 5.58E-03 | 0.00E+00 | 2.25E+00 |
| 216-A-30 | 1990 | 1.17E-06 | 2.14E-04 | 0.00E+00 | 4.27E-08 | 7.68E-02 | 2.09E-05 | 2.13E-03 | 1.14E-01 | 8.31E-03 | 3.20E-04 | 3.64E-04 | 5.58E-03 | 0.00E+00 | 2.25E+00 |
| 216-A-30 | 1991 | 1.17E-06 | 2.02E-04 | 0.00E+00 | 4.29E-08 | 7.50E-02 | 2.09E-05 | 2.11E-03 | 1.14E-01 | 8.31E-03 | 3.20E-04 | 3.64E-04 | 5.58E-03 | 0.00E+00 | 2.25E+00 |
| 216-A-4 | 1955 | 1.88E-07 | 2.44E-04 | 0.00E+00 | 4.61E-09 | 2.85E-02 | 3.33E-06 | 4.84E-04 | 1.82E-02 | 1.32E-03 | 5.11E-05 | 5.81E-05 | 8.92E-04 | 0.00E+00 | 3.59E-01 |
| 216-A-4 | 1956 | 1.88E-07 | 2.31E-04 | 0.00E+00 | 4.74E-09 | 2.78E-02 | 3.33E-06 | 4.79E-04 | 1.82E-02 | 1.32E-03 | 5.11E-05 | 5.81E-05 | 8.92E-04 | 0.00E+00 | 3.59E-01 |
| 216-A-4 | 1957 | 1.88E-07 | 2.18E-04 | 0.00E+00 | 4.85E-09 | 2.72E-02 | 3.33E-06 | 4.74E-04 | 1.82E-02 | 1.32E-03 | 5.11E-05 | 5.81E-05 | 8.92E-04 | 0.00E+00 | 3.59E-01 |
| 216-A-4 | 1958 | 1.88E-07 | 2.07E-04 | 0.00E+00 | 4.97E-09 | 2.65E-02 | 3.33E-06 | 4.70E-04 | 1.82E-02 | 1.32E-03 | 5.11E-05 | 5.81E-05 | 8.92E-04 | 0.00E+00 | 3.59E-01 |
| 216-A-6 | 1955 | 2.35E-08 | 3.06E-05 | 0.00E+00 | 5.77E-10 | 3.57E-03 | 4.17E-07 | 6.06E-05 | 2.28E-03 | 1.66E-04 | 6.40E-06 | 7.27E-06 | 1.12E-04 | 0.00E+00 | 4.50E-02 |
| 216-A-6 | 1956 | 2.35E-08 | 2.89E-05 | 0.00E+00 | 5.93E-10 | 3.48E-03 | 4.17E-07 | 6.00E-05 | 2.28E-03 | 1.66E-04 | 6.40E-06 | 7.27E-06 | 1.12E-04 | 0.00E+00 | 4.50E-02 |
| 216-A-6 | 1957 | 2.35E-08 | 2.74E-05 | 0.00E+00 | 6.08E-10 | 3.40E-03 | 4.17E-07 | 5.94E-05 | 2.28E-03 | 1.66E-04 | 6.40E-06 | 7.27E-06 | 1.12E-04 | 0.00E+00 | 4.50E-02 |
| 216-A-6 | 1958 | 2.35E-08 | 2.59E-05 | 0.00E+00 | 6.22E-10 | 3.32E-03 | 4.17E-07 | 5.88E-05 | 2.28E-03 | 1.66E-04 | 6.40E-06 | 7.27E-06 | 1.12E-04 | 0.00E+00 | 4.50E-02 |
| 216-A-6 | 1959 | 2.35E-08 | 2.44E-05 | 0.00E+00 | 6.35E-10 | 3.24E-03 | 4.17E-07 | 5.82E-05 | 2.28E-03 | 1.66E-04 | 6.40E-06 | 7.27E-06 | 1.12E-04 | 0.00E+00 | 4.50E-02 |
| 216-A-6 | 1960 | 2.35E-08 | 2.31E-05 | 0.00E+00 | 6.48E-10 | 3.16E-03 | 4.17E-07 | 5.76E-05 | 2.28E-03 | 1.66E-04 | 6.40E-06 | 7.27E-06 | 1.12E-04 | 0.00E+00 | 4.50E-02 |
| 216-A-6 | 1961 | 2.35E-08 | 2.18E-05 | 0.00E+00 | 6.61E-10 | 3.09E-03 | 4.17E-07 | 5.71E-05 | 2.28E-03 | 1.66E-04 | 6.40E-06 | 7.27E-06 | 1.12E-04 | 0.00E+00 | 4.50E-02 |
| 216-A-6 | 1966 | 2.35E-08 | 1.65E-05 | 0.00E+00 | 7.14E-10 | 2.74E-03 | 4.17E-07 | 5.43E-05 | 2.28E-03 | 1.66E-04 | 6.40E-06 | 7.27E-06 | 1.12E-04 | 0.00E+00 | 4.50E-02 |
| 216-A-6 | 1967 | 2.35E-08 | 1.56E-05 | 0.00E+00 | 7.24E-10 | 2.67E-03 | 4.17E-07 | 5.37E-05 | 2.28E-03 | 1.66E-04 | 6.40E-06 | 7.27E-06 | 1.12E-04 | 0.00E+00 | 4.50E-02 |
| 216-A-6 | 1968 | 2.35E-08 | 1.47E-05 | 0.00E+00 | 7.32E-10 | 2.61E-03 | 4.17E-07 | 5.31E-05 | 2.28E-03 | 1.66E-04 | 6.40E-06 | 7.27E-06 | 1.12E-04 | 0.00E+00 | 4.50E-02 |
| 216-A-6 | 1969 | 2.35E-08 | 1.39E-05 | 0.00E+00 | 7.41E-10 | 2.55E-03 | 4.17E-07 | 5.26E-05 | 2.28E-03 | 1.66E-04 | 6.40E-06 | 7.27E-06 | 1.12E-04 | 0.00E+00 | 4.50E-02 |
| 216-A-6 | 1970 | 2.35E-08 | 1.32E-05 | 0.00E+00 | 7.49E-10 | 2.49E-03 | 4.17E-07 | 5.21E-05 | 2.28E-03 | 1.66E-04 | 6.40E-06 | 7.27E-06 | 1.12E-04 | 0.00E+00 | 4.50E-02 |
| 216-A-9 | 1966 | 1.30E-04 | 9.09E-02 | 0.00E+00 | 3.94E-06 | 1.51E+01 | 2.30E-03 | 2.99E-01 | 1.26E+01 | 9.14E-01 | 3.53E-02 | 4.01E-02 | 6.15E-01 | 0.00E+00 | 2.48E+02 |
| 216-B-12 | 1967 | 1.96E-04 | 6.11E-03 | 4.85E-07 | 2.44E-06 | 8.49E+01 | 4.25E-04 | 8.32E-07 | 4.65E-08 | 3.92E-02 | 1.73E-03 | 5.32E-04 | 4.00E-02 | 8.21E-05 | 3.00E-03 |
| 216-B-20 | 1956 | 2.03E-04 | 6.77E-02 | 5.57E-06 | 2.24E-05 | 5.53E+02 | 2.76E-03 | 3.02E-08 | 0.00E+00 | 1.55E-03 | 6.94E-05 | 1.78E-05 | 1.58E-03 | 0.00E+00 | 1.07E-01 |
| 216-B-26 | 1956 | 4.03E-05 | 1.23E-02 | 8.08E-07 | 4.99E-06 | 4.76E+02 | 6.30E-04 | 3.35E-08 | 7.98E-10 | 1.73E-03 | 7.71E-05 | 1.97E-05 | 1.76E-03 | 0.00E+00 | 4.07E-02 |
| 216-B-26 | 1957 | 5.33E-05 | 1.54E-02 | 1.07E-06 | 6.62E-06 | 6.16E+02 | 8.34E-04 | 4.40E-08 | 1.09E-09 | 2.29E-03 | 1.02E-04 | 2.62E-05 | 2.33E-03 | 0.00E+00 | 5.39E-02 |
| 216-B-35 | 1954 | 1.21E-04 | 1.20E-01 | 2.62E-06 | 6.89E-06 | 1.63E+01 | 3.00E-04 | 3.28E-08 | 1.79E-10 | 1.14E-03 | 5.02E-05 | 1.68E-05 | 1.16E-03 | 0.00E+00 | 4.31E-01 |
| 216-B-36 | 1954 | 2.21E-04 | 2.20E-01 | 4.79E-06 | 1.26E-05 | 2.98E+01 | 5.49E-04 | 6.00E-08 | 3.27E-10 | 2.08E-03 | 9.19E-05 | 3.08E-05 | 2.13E-03 | 0.00E+00 | 7.88E-01 |
| 216-B-37 | 1954 | 4.92E-04 | 4.90E-01 | 1.07E-05 | 2.81E-05 | 6.64E+01 | 1.22E-03 | 1.34E-07 | 7.28E-10 | 4.64E-03 | 2.05E-04 | 6.86E-05 | 4.74E-03 | 0.00E+00 | 1.75E+00 |
| 216-B-38 | 1954 | 1.63E-04 | 1.62E-01 | 3.53E-06 | 9.29E-06 | 2.20E+01 | 4.05E-04 | 4.43E-08 | 2.41E-10 | 1.54E-03 | 6.77E-05 | 2.27E-05 | 1.57E-03 | 0.00E+00 | 5.81E-01 |
| 216-B-39 | 1953 | 8.88E-05 | 9.37E-02 | 1.93E-06 | 5.07E-06 | 1.23E+01 | 2.21E-04 | 2.44E-08 | 1.09E-10 | 8.38E-04 | 3.69E-05 | 1.24E-05 | 8.57E-04 | 0.00E+00 | 3.17E-01 |
| 216-B-39 | 1954 | 8.65E-05 | 8.63E-02 | 1.88E-06 | 4.94E-06 | 1.17E+01 | 2.15E-04 | 2.35E-08 | 1.28E-10 | 8.17E-04 | 3.60E-05 | 1.21E-05 | 8.35E-04 | 0.00E+00 | 3.09E-01 |
| 216-B-40 | 1954 | 1.87E-04 | 1.86E-01 | 4.05E-06 | 1.07E-05 | 2.52E+01 | 4.64E-04 | 5.08E-08 | 2.76E-10 | 1.76E-03 | 7.77E-05 | 2.60E-05 | 1.80E-03 | 0.00E+00 | 6.66E-01 |
| 216-B-41 | 1954 | 1.64E-04 | 1.63E-01 | 3.56E-06 | 9.36E-06 | 2.21E+01 | 4.08E-04 | 4.46E-08 | 2.43E-10 | 1.55E-03 | 6.82E-05 | 2.29E-05 | 1.58E-03 | 0.00E+00 | 5.85E-01 |
| 216-B-45 | 1955 | 8.44E-05 | 2.72E-02 | 1.69E-06 | 1.05E-05 | 9.93E+02 | 1.32E-03 | 6.97E-08 | 1.56E-09 | 3.55E-03 | 1.59E-04 | 4.06E-05 | 3.62E-03 | 0.00E+00 | 8.36E-02 |
| 216-B-5 | 1946 | 4.24E-05 | 3.93E-07 | 1.68E-09 | 4.56E-05 | 2.48E-02 | 3.81E-06 | 1.09E-11 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.38E-07 | 0.00E+00 | 3.24E+01 |
| 216-B-53A | 1965 | 1.94E-06 | 1.44E-03 | 0.00E+00 | 5.81E-08 | 2.31E-01 | 3.44E-05 | 4.52E-03 | 1.88E-01 | 1.37E-02 | 5.27E-04 | 5.99E-04 | 9.20E-03 | 0.00E+00 | 3.71E+00 |
| 216-B-53B | 1963 | 5.63E-07 | 4.68E-04 | 0.00E+00 | 1.64E-08 | 7.05E-02 | 9.99E-06 | 1.34E-03 | 5.47E-02 | 3.97E-03 | 1.53E-04 | 1.74E-04 | 2.67E-03 | 0.00E+00 | 1.08E+00 |
| 216-B-54 | 1965 | 5.63E-07 | 4.18E-04 | 0.00E+00 | 1.69E-08 | 6.72E-02 | 9.99E-06 | 1.31E-03 | 5.47E-02 | 3.97E-03 | 1.53E-04 | 1.74E-04 | 2.67E-03 | 0.00E+00 | 1.08E+00 |

ECF-HANFORD-20-0072, REV. 0

| Site Name | Discharge/ Decay- Corrected Year | C-14 | H-3 | I-129 | Np-237 | Sr-90 | Tc-99 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Am-241 | Pu-239 |
|------------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 216-B-58 | 1965 | 4.50E-07 | 3.34E-04 | 0.00E+00 | 1.35E-08 | 5.38E-02 | 7.99E-06 | 1.05E-03 | 4.38E-02 | 3.18E-03 | 1.23E-04 | 1.39E-04 | 2.14E-03 | 0.00E+00 | 8.62E-01 |
| 216-B-60 | 1968 | 4.44E-08 | 2.78E-05 | 0.00E+00 | 1.38E-09 | 4.93E-03 | 7.88E-07 | 1.00E-04 | 4.32E-03 | 3.13E-04 | 1.21E-05 | 1.37E-05 | 2.11E-04 | 0.00E+00 | 8.50E-02 |
| 216-B-7A&B | 1966 | 1.09E-05 | 7.67E-03 | 0.00E+00 | 3.32E-07 | 1.27E+00 | 1.94E-04 | 2.52E-02 | 1.06E+00 | 7.71E-02 | 2.97E-03 | 3.38E-03 | 5.19E-02 | 0.00E+00 | 2.09E+01 |
| 216-B-7A&B | 1967 | 3.09E-06 | 1.57E-03 | 1.71E-09 | 1.77E-07 | 1.40E+00 | 7.04E-05 | 5.37E-03 | 2.28E-01 | 1.67E-02 | 6.44E-04 | 7.30E-04 | 1.13E-02 | 0.00E+00 | 4.55E+00 |
| 216-C-1 | 1955 | 4.47E-08 | 1.29E-06 | 1.03E-10 | 5.92E-09 | 9.06E-02 | 1.72E-06 | 6.78E-10 | 1.82E-09 | 5.86E-06 | 2.48E-07 | 1.40E-07 | 5.88E-06 | 0.00E+00 | 3.17E-03 |
| 216-C-1 | 1956 | 1.79E-07 | 4.89E-06 | 4.11E-10 | 2.38E-08 | 3.54E-01 | 6.88E-06 | 1.39E-06 | 7.73E-08 | 5.85E-02 | 2.59E-03 | 7.95E-04 | 5.98E-02 | 0.00E+00 | 1.27E-02 |
| 216-C-1 | 1957 | 3.03E-07 | 3.53E-04 | 0.00E+00 | 7.84E-09 | 4.39E-02 | 5.38E-06 | 7.66E-04 | 2.95E-02 | 2.14E-03 | 8.25E-05 | 9.38E-05 | 1.44E-03 | 0.00E+00 | 5.80E-01 |
| 216-C-5 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.53E-07 | 7.63E-09 | 6.37E-03 | 2.82E-04 | 8.65E-05 | 6.50E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1957 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.34E-06 | 6.84E-08 | 5.72E-02 | 2.53E-03 | 7.77E-04 | 5.84E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1958 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.90E-06 | 9.80E-08 | 8.19E-02 | 3.62E-03 | 1.11E-03 | 8.35E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1959 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.14E-08 | 2.67E-09 | 2.23E-03 | 9.88E-05 | 3.03E-05 | 2.28E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1960 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.38E-08 | 1.25E-09 | 1.04E-03 | 4.61E-05 | 1.42E-05 | 1.06E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1961 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.35E-08 | 1.25E-09 | 1.04E-03 | 4.61E-05 | 1.42E-05 | 1.06E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1962 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.65E-09 | 3.56E-10 | 2.98E-04 | 1.32E-05 | 4.04E-06 | 3.04E-04 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1963 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.58E-07 | 3.56E-08 | 2.98E-02 | 1.32E-03 | 4.04E-04 | 3.04E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1964 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.52E-08 | 3.56E-09 | 2.98E-03 | 1.32E-04 | 4.04E-05 | 3.04E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1965 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.26E-08 | 1.25E-09 | 1.04E-03 | 4.61E-05 | 1.42E-05 | 1.06E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1966 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.39E-08 | 3.56E-09 | 2.98E-03 | 1.32E-04 | 4.04E-05 | 3.04E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-17 | 1952 | 1.16E-06 | 3.14E-04 | 3.24E-08 | 1.43E-07 | 4.72E+00 | 2.02E-05 | 2.90E-10 | 8.51E-10 | 4.40E-06 | 1.89E-07 | 9.09E-08 | 4.51E-06 | 1.83E-04 | 6.53E-04 |
| 216-S-17 | 1953 | 1.16E-06 | 2.96E-04 | 3.24E-08 | 1.43E-07 | 4.60E+00 | 2.02E-05 | 2.87E-10 | 8.52E-10 | 4.40E-06 | 1.89E-07 | 9.09E-08 | 4.51E-06 | 1.89E-04 | 6.53E-04 |
| 216-S-17 | 1954 | 1.16E-06 | 2.80E-04 | 3.24E-08 | 1.43E-07 | 4.49E+00 | 2.02E-05 | 2.84E-10 | 8.52E-10 | 4.40E-06 | 1.89E-07 | 9.09E-08 | 4.51E-06 | 1.94E-04 | 6.53E-04 |
| 216-S-20 | 1952 | 5.30E-08 | 8.16E-05 | 0.00E+00 | 1.18E-09 | 8.63E-03 | 9.39E-07 | 1.41E-04 | 5.14E-03 | 3.73E-04 | 1.44E-05 | 1.64E-05 | 2.51E-04 | 0.00E+00 | 1.01E-01 |
| 216-S-20 | 1953 | 6.08E-08 | 8.85E-05 | 0.00E+00 | 1.41E-09 | 9.68E-03 | 1.08E-06 | 1.60E-04 | 5.90E-03 | 4.28E-04 | 1.65E-05 | 1.88E-05 | 2.89E-04 | 0.00E+00 | 1.16E-01 |
| 216-S-20 | 1954 | 1.52E-06 | 2.09E-03 | 0.00E+00 | 3.63E-08 | 2.36E-01 | 2.69E-05 | 3.96E-03 | 1.48E-01 | 1.07E-02 | 4.13E-04 | 4.70E-04 | 7.21E-03 | 0.00E+00 | 2.91E+00 |
| 216-S-21 | 1968 | 8.03E-05 | 1.18E-02 | 4.29E-06 | 1.11E-05 | 2.00E+00 | 2.78E-03 | 4.29E-08 | 1.84E-06 | 3.91E-06 | 1.58E-07 | 9.78E-08 | 3.37E-06 | 2.19E-03 | 2.01E-03 |
| 216-S-21 | 1969 | 8.03E-05 | 1.11E-02 | 4.29E-06 | 1.11E-05 | 1.96E+00 | 2.78E-03 | 4.24E-08 | 1.84E-06 | 3.91E-06 | 1.58E-07 | 9.78E-08 | 3.37E-06 | 2.21E-03 | 2.01E-03 |
| 216-S-5 | 1954 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.42E-06 | 1.20E-07 | 1.00E-01 | 4.43E-03 | 1.36E-03 | 1.02E-01 | 0.00E+00 | 0.00E+00 |
| 216-S-5 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.40E-06 | 1.20E-07 | 1.00E-01 | 4.43E-03 | 1.36E-03 | 1.02E-01 | 0.00E+00 | 0.00E+00 |
| 216-S-5 | 1956 | 2.31E-05 | 5.01E-03 | 6.47E-07 | 2.86E-06 | 8.57E+01 | 4.04E-04 | 2.38E-06 | 1.37E-07 | 1.00E-01 | 4.43E-03 | 1.36E-03 | 1.02E-01 | 4.07E-03 | 1.31E-02 |
| 216-S-6 | 1954 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.19E-07 | 2.57E-08 | 2.14E-02 | 9.49E-04 | 2.91E-04 | 2.19E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-6 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.06E-06 | 1.03E-07 | 8.58E-02 | 3.80E-03 | 1.16E-03 | 8.75E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-6 | 1956 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.37E-06 | 1.20E-07 | 1.00E-01 | 4.43E-03 | 1.36E-03 | 1.02E-01 | 0.00E+00 | 0.00E+00 |
| 216-S-6 | 1957 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.68E-07 | 8.55E-09 | 7.15E-03 | 3.16E-04 | 9.71E-05 | 7.29E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-6 | 1958 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.66E-07 | 1.37E-08 | 1.14E-02 | 5.06E-04 | 1.55E-04 | 1.17E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-6 | 1959 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.57E-08 | 4.45E-09 | 3.72E-03 | 1.65E-04 | 5.05E-05 | 3.80E-03 | 0.00E+00 | 0.00E+00 |
| 216-T-12 | 1954 | 5.69E-07 | 5.68E-04 | 1.23E-08 | 3.25E-08 | 7.69E-02 | 1.42E-06 | 1.55E-10 | 8.43E-13 | 5.37E-06 | 2.37E-07 | 7.94E-08 | 5.49E-06 | 0.00E+00 | 2.03E-03 |
| 216-T-14 | 1954 | 1.14E-04 | 1.14E-01 | 2.48E-06 | 6.54E-06 | 1.55E+01 | 2.85E-04 | 3.11E-08 | 1.70E-10 | 1.08E-03 | 4.76E-05 | 1.60E-05 | 1.10E-03 | 0.00E+00 | 4.09E-01 |
| 216-T-15 | 1954 | 1.19E-04 | 1.18E-01 | 2.57E-06 | 6.77E-06 | 1.60E+01 | 2.95E-04 | 3.23E-08 | 1.76E-10 | 1.12E-03 | 4.93E-05 | 1.65E-05 | 1.14E-03 | 0.00E+00 | 4.23E-01 |
| 216-T-16 | 1954 | 1.16E-04 | 1.16E-01 | 2.52E-06 | 6.63E-06 | 1.57E+01 | 2.89E-04 | 3.16E-08 | 1.72E-10 | 1.10E-03 | 4.83E-05 | 1.62E-05 | 1.12E-03 | 0.00E+00 | 4.14E-01 |

ECF-HANFORD-20-0072, REV. 0

| Site Name | Discharge/ Decay- Corrected Year | C-14 | H-3 | I-129 | Np-237 | Sr-90 | Tc-99 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Am-241 | Pu-239 |
|-----------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 216-T-17 | 1954 | 8.93E-05 | 8.91E-02 | 1.94E-06 | 5.10E-06 | 1.21E+01 | 2.22E-04 | 2.43E-08 | 1.32E-10 | 8.44E-04 | 3.72E-05 | 1.25E-05 | 8.62E-04 | 0.00E+00 | 3.19E-01 |
| 216-T-18 | 1953 | 7.42E-04 | 9.18E-03 | 4.10E-06 | 1.01E-05 | 1.08E+02 | 4.25E-04 | 1.29E-07 | 3.94E-09 | 8.08E-03 | 3.64E-04 | 7.25E-05 | 8.23E-03 | 0.00E+00 | 2.55E+00 |
| 216-T-19 | 1955 | 3.88E-06 | 1.54E-05 | 0.00E+00 | 8.66E-07 | 1.21E-02 | 2.09E-06 | 2.65E-11 | 0.00E+00 | 1.02E-06 | 4.61E-08 | 3.99E-09 | 1.13E-06 | 0.00E+00 | 7.36E-02 |
| 216-T-21 | 1954 | 5.27E-05 | 5.26E-02 | 1.14E-06 | 3.01E-06 | 7.12E+00 | 1.31E-04 | 1.43E-08 | 7.80E-11 | 4.98E-04 | 2.19E-05 | 7.35E-06 | 5.08E-04 | 0.00E+00 | 1.88E-01 |
| 216-T-22 | 1954 | 1.75E-04 | 1.75E-01 | 3.80E-06 | 1.00E-05 | 2.37E+01 | 4.36E-04 | 4.77E-08 | 2.60E-10 | 1.65E-03 | 7.29E-05 | 2.44E-05 | 1.69E-03 | 0.00E+00 | 6.26E-01 |
| 216-T-23 | 1954 | 1.69E-04 | 1.69E-01 | 3.67E-06 | 9.65E-06 | 2.28E+01 | 4.21E-04 | 4.60E-08 | 2.50E-10 | 1.60E-03 | 7.04E-05 | 2.36E-05 | 1.63E-03 | 0.00E+00 | 6.04E-01 |
| 216-T-24 | 1954 | 1.75E-04 | 1.75E-01 | 3.80E-06 | 1.00E-05 | 2.37E+01 | 4.36E-04 | 4.77E-08 | 2.60E-10 | 1.65E-03 | 7.29E-05 | 2.44E-05 | 1.69E-03 | 0.00E+00 | 6.26E-01 |
| 216-T-25 | 1954 | 3.40E-04 | 3.39E-01 | 7.38E-06 | 1.94E-05 | 4.59E+01 | 8.45E-04 | 9.24E-08 | 5.03E-10 | 3.21E-03 | 1.41E-04 | 4.74E-05 | 3.28E-03 | 0.00E+00 | 1.21E+00 |
| 216-T-26 | 1955 | 5.52E-03 | 6.11E-02 | 3.05E-05 | 7.49E-05 | 7.69E+02 | 3.17E-03 | 9.44E-07 | 3.00E-08 | 6.02E-02 | 2.71E-03 | 5.40E-04 | 6.13E-02 | 0.00E+00 | 1.90E+01 |
| 216-T-26 | 1956 | 2.49E-03 | 2.60E-02 | 1.37E-05 | 3.37E-05 | 3.38E+02 | 1.43E-03 | 4.21E-07 | 1.37E-08 | 2.71E-02 | 1.22E-03 | 2.43E-04 | 2.76E-02 | 0.00E+00 | 8.55E+00 |
| 216-T-27 | 1965 | 6.01E-07 | 4.46E-04 | 0.00E+00 | 1.80E-08 | 7.17E-02 | 1.07E-05 | 1.40E-03 | 5.84E-02 | 4.24E-03 | 1.63E-04 | 1.86E-04 | 2.85E-03 | 0.00E+00 | 1.15E+00 |
| 216-T-28 | 1965 | 2.25E-05 | 1.67E-02 | 0.00E+00 | 6.75E-07 | 2.69E+00 | 4.00E-04 | 5.25E-02 | 2.19E+00 | 1.59E-01 | 6.13E-03 | 6.97E-03 | 1.07E-01 | 0.00E+00 | 4.31E+01 |
| 216-T-3 | 1946 | 2.14E-05 | 1.99E-07 | 8.52E-10 | 2.31E-05 | 1.26E-02 | 1.93E-06 | 5.52E-12 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.73E-07 | 0.00E+00 | 1.64E+01 |
| 216-T-32 | 1946 | 1.25E-07 | 1.17E-09 | 4.99E-12 | 1.35E-07 | 7.35E-05 | 1.13E-08 | 3.23E-14 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.19E-09 | 0.00E+00 | 9.59E-02 |
| 216-T-32 | 1947 | 8.37E-07 | 7.34E-09 | 3.33E-11 | 9.00E-07 | 4.78E-04 | 7.52E-08 | 2.13E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.46E-08 | 0.00E+00 | 6.39E-01 |
| 216-T-32 | 1948 | 1.05E-06 | 8.68E-09 | 4.16E-11 | 1.13E-06 | 5.84E-04 | 9.40E-08 | 2.64E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.82E-08 | 0.00E+00 | 7.99E-01 |
| 216-T-32 | 1949 | 1.07E-06 | 8.37E-09 | 4.24E-11 | 1.15E-06 | 5.81E-04 | 9.59E-08 | 2.67E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.86E-08 | 0.00E+00 | 8.15E-01 |
| 216-T-32 | 1950 | 1.82E-06 | 7.27E-07 | 0.00E+00 | 2.02E-06 | 1.09E-03 | 1.66E-07 | 4.85E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.96E-08 | 0.00E+00 | 1.29E+00 |
| 216-T-32 | 1951 | 2.38E-06 | 9.00E-07 | 0.00E+00 | 2.64E-06 | 1.39E-03 | 2.17E-07 | 6.29E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.57E-08 | 0.00E+00 | 1.69E+00 |
| 216-T-32 | 1952 | 5.28E-07 | 1.89E-07 | 0.00E+00 | 5.88E-07 | 3.01E-04 | 4.82E-08 | 1.38E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.71E-09 | 0.00E+00 | 3.75E-01 |
| 216-T-33 | 1963 | 1.18E-06 | 9.76E-04 | 0.00E+00 | 3.42E-08 | 1.47E-01 | 2.09E-05 | 2.80E-03 | 1.14E-01 | 8.29E-03 | 3.20E-04 | 3.64E-04 | 5.58E-03 | 0.00E+00 | 2.25E+00 |
| 216-T-34 | 1966 | 3.29E-06 | 2.31E-03 | 0.00E+00 | 9.99E-08 | 3.83E-01 | 5.84E-05 | 7.59E-03 | 3.20E-01 | 2.32E-02 | 8.96E-04 | 1.02E-03 | 1.56E-02 | 0.00E+00 | 6.29E+00 |
| 216-T-36 | 1967 | 8.72E-06 | 5.78E-03 | 0.00E+00 | 2.68E-07 | 9.92E-01 | 1.55E-04 | 1.99E-02 | 8.47E-01 | 6.15E-02 | 2.37E-03 | 2.70E-03 | 4.14E-02 | 0.00E+00 | 1.67E+01 |
| 216-T-36 | 1968 | 2.94E-06 | 1.84E-03 | 0.00E+00 | 9.15E-08 | 3.26E-01 | 5.21E-05 | 6.64E-03 | 2.85E-01 | 2.07E-02 | 8.00E-04 | 9.09E-04 | 1.40E-02 | 0.00E+00 | 5.62E+00 |
| 216-T-36 | 1969 | 3.15E-07 | 1.87E-04 | 0.00E+00 | 9.92E-09 | 3.41E-02 | 5.59E-06 | 7.05E-04 | 3.06E-02 | 2.22E-03 | 8.57E-05 | 9.75E-05 | 1.50E-03 | 0.00E+00 | 6.02E-01 |
| 216-T-4A | 1957 | 4.70E-10 | 5.47E-07 | 0.00E+00 | 1.22E-11 | 6.80E-05 | 8.34E-09 | 1.19E-06 | 4.57E-05 | 3.31E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 9.00E-04 |
| 216-T-4A | 1960 | 4.70E-10 | 4.62E-07 | 0.00E+00 | 1.30E-11 | 6.33E-05 | 8.34E-09 | 1.15E-06 | 4.57E-05 | 3.31E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 9.00E-04 |
| 216-T-4A | 1961 | 4.70E-10 | 4.37E-07 | 0.00E+00 | 1.32E-11 | 6.18E-05 | 8.34E-09 | 1.14E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 9.00E-04 |
| 216-T-4A | 1962 | 4.70E-10 | 4.13E-07 | 0.00E+00 | 1.34E-11 | 6.03E-05 | 8.34E-09 | 1.13E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 9.00E-04 |
| 216-T-4A | 1963 | 4.70E-10 | 3.90E-07 | 0.00E+00 | 1.37E-11 | 5.89E-05 | 8.34E-09 | 1.12E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 9.00E-04 |
| 216-T-4A | 1964 | 4.70E-10 | 3.69E-07 | 0.00E+00 | 1.39E-11 | 5.75E-05 | 8.34E-09 | 1.11E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 9.00E-04 |
| 216-T-4A | 1965 | 4.70E-10 | 3.49E-07 | 0.00E+00 | 1.41E-11 | 5.61E-05 | 8.34E-09 | 1.10E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1966 | 4.70E-10 | 3.30E-07 | 0.00E+00 | 1.43E-11 | 5.48E-05 | 8.34E-09 | 1.09E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1967 | 4.70E-10 | 3.12E-07 | 0.00E+00 | 1.45E-11 | 5.35E-05 | 8.34E-09 | 1.07E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1968 | 4.70E-10 | 2.95E-07 | 0.00E+00 | 1.46E-11 | 5.22E-05 | 8.34E-09 | 1.06E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1969 | 4.70E-10 | 2.78E-07 | 0.00E+00 | 1.48E-11 | 5.10E-05 | 8.34E-09 | 1.05E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1970 | 4.70E-10 | 2.63E-07 | 0.00E+00 | 1.50E-11 | 4.97E-05 | 8.34E-09 | 1.04E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1971 | 4.70E-10 | 2.49E-07 | 0.00E+00 | 1.51E-11 | 4.86E-05 | 8.34E-09 | 1.03E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1972 | 4.70E-10 | 2.35E-07 | 0.00E+00 | 1.53E-11 | 4.74E-05 | 8.34E-09 | 1.02E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.45E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |

ECF-HANFORD-20-0072, REV. 0

| Site Name | Discharge/ Decay- Corrected Year | C-14 | H-3 | I-129 | Np-237 | Sr-90 | Tc-99 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Am-241 | Pu-239 |
|-----------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 216-T-4A | 1973 | 4.69E-10 | 2.22E-07 | 0.00E+00 | 1.54E-11 | 4.63E-05 | 8.34E-09 | 1.01E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1974 | 4.69E-10 | 2.10E-07 | 0.00E+00 | 1.56E-11 | 4.52E-05 | 8.34E-09 | 1.00E-06 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1975 | 4.69E-10 | 1.99E-07 | 0.00E+00 | 1.57E-11 | 4.41E-05 | 8.34E-09 | 9.90E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1976 | 4.69E-10 | 1.88E-07 | 0.00E+00 | 1.58E-11 | 4.31E-05 | 8.34E-09 | 9.80E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1977 | 4.69E-10 | 1.78E-07 | 0.00E+00 | 1.59E-11 | 4.20E-05 | 8.34E-09 | 9.71E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1978 | 4.69E-10 | 1.68E-07 | 0.00E+00 | 1.60E-11 | 4.10E-05 | 8.34E-09 | 9.61E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1979 | 4.69E-10 | 1.59E-07 | 0.00E+00 | 1.62E-11 | 4.01E-05 | 8.34E-09 | 9.51E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1980 | 4.69E-10 | 1.50E-07 | 0.00E+00 | 1.63E-11 | 3.91E-05 | 8.34E-09 | 9.42E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1981 | 4.69E-10 | 1.42E-07 | 0.00E+00 | 1.64E-11 | 3.82E-05 | 8.34E-09 | 9.32E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1982 | 4.69E-10 | 1.34E-07 | 0.00E+00 | 1.65E-11 | 3.73E-05 | 8.34E-09 | 9.23E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1983 | 4.69E-10 | 1.27E-07 | 0.00E+00 | 1.65E-11 | 3.64E-05 | 8.34E-09 | 9.15E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1984 | 4.69E-10 | 1.20E-07 | 0.00E+00 | 1.66E-11 | 3.55E-05 | 8.34E-09 | 9.05E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1985 | 4.69E-10 | 1.13E-07 | 0.00E+00 | 1.67E-11 | 3.47E-05 | 8.34E-09 | 8.96E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1986 | 4.69E-10 | 1.07E-07 | 0.00E+00 | 1.68E-11 | 3.38E-05 | 8.34E-09 | 8.87E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1987 | 4.69E-10 | 1.01E-07 | 0.00E+00 | 1.69E-11 | 3.30E-05 | 8.34E-09 | 8.79E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.99E-04 |
| 216-T-4A | 1988 | 4.69E-10 | 9.56E-08 | 0.00E+00 | 1.69E-11 | 3.22E-05 | 8.34E-09 | 8.70E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.98E-04 |
| 216-T-4A | 1989 | 4.69E-10 | 9.04E-08 | 0.00E+00 | 1.70E-11 | 3.15E-05 | 8.34E-09 | 8.61E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.98E-04 |
| 216-T-4A | 1990 | 4.69E-10 | 8.54E-08 | 0.00E+00 | 1.71E-11 | 3.07E-05 | 8.34E-09 | 8.52E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.98E-04 |
| 216-T-4A | 1991 | 4.68E-10 | 8.08E-08 | 0.00E+00 | 1.71E-11 | 3.00E-05 | 8.34E-09 | 8.44E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.98E-04 |
| 216-T-4A | 1992 | 4.68E-10 | 7.64E-08 | 0.00E+00 | 1.72E-11 | 2.93E-05 | 8.34E-09 | 8.35E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.98E-04 |
| 216-T-4A | 1993 | 4.68E-10 | 7.22E-08 | 0.00E+00 | 1.73E-11 | 2.86E-05 | 8.34E-09 | 8.27E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.98E-04 |
| 216-T-4A | 1994 | 4.68E-10 | 6.82E-08 | 0.00E+00 | 1.73E-11 | 2.79E-05 | 8.34E-09 | 8.19E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.98E-04 |
| 216-T-4A | 1995 | 4.68E-10 | 6.45E-08 | 0.00E+00 | 1.74E-11 | 2.72E-05 | 8.34E-09 | 8.11E-07 | 4.57E-05 | 3.32E-06 | 1.28E-07 | 1.46E-07 | 2.23E-06 | 0.00E+00 | 8.98E-04 |
| 216-T-5 | 1955 | 4.51E-05 | 1.79E-04 | 0.00E+00 | 1.01E-05 | 1.41E-01 | 2.43E-05 | 3.08E-10 | 0.00E+00 | 1.18E-05 | 5.36E-07 | 4.64E-08 | 1.31E-05 | 0.00E+00 | 8.56E-01 |
| 216-T-6 | 1946 | 1.92E-06 | 1.78E-08 | 7.63E-11 | 2.07E-06 | 1.12E-03 | 1.73E-07 | 4.95E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.34E-08 | 0.00E+00 | 1.47E+00 |
| 216-T-7 | 1947 | 2.20E-05 | 6.23E-06 | 5.16E-09 | 4.74E-06 | 7.42E-02 | 1.17E-05 | 1.51E-10 | 0.00E+00 | 1.01E-05 | 4.52E-07 | 7.53E-08 | 1.03E-05 | 0.00E+00 | 1.13E-01 |
| 216-T-7 | 1948 | 4.99E-05 | 1.34E-05 | 1.17E-08 | 1.08E-05 | 1.64E-01 | 2.65E-05 | 3.39E-10 | 0.00E+00 | 2.28E-05 | 1.02E-06 | 1.71E-07 | 2.34E-05 | 0.00E+00 | 2.55E-01 |
| 216-T-7 | 1949 | 5.05E-05 | 1.28E-05 | 1.18E-08 | 1.09E-05 | 1.62E-01 | 2.68E-05 | 3.39E-10 | 0.00E+00 | 2.31E-05 | 1.04E-06 | 1.74E-07 | 2.36E-05 | 0.00E+00 | 2.58E-01 |
| 216-T-7 | 1950 | 7.14E-05 | 3.75E-04 | 0.00E+00 | 1.59E-05 | 2.52E-01 | 3.85E-05 | 5.13E-10 | 0.00E+00 | 1.85E-05 | 8.41E-07 | 5.07E-08 | 2.08E-05 | 0.00E+00 | 1.35E+00 |
| 216-T-7 | 1951 | 9.44E-05 | 4.68E-04 | 0.00E+00 | 2.10E-05 | 3.25E-01 | 5.08E-05 | 6.70E-10 | 0.00E+00 | 2.45E-05 | 1.11E-06 | 7.30E-08 | 2.74E-05 | 0.00E+00 | 1.79E+00 |
| 216-T-7 | 1952 | 5.01E-05 | 2.33E-04 | 0.00E+00 | 1.16E-05 | 1.67E-01 | 2.68E-05 | 3.49E-10 | 0.00E+00 | 1.24E-05 | 5.71E-07 | 0.00E+00 | 1.44E-05 | 0.00E+00 | 1.31E+00 |
| 216-T-7 | 1953 | 3.71E-05 | 1.60E-04 | 0.00E+00 | 9.23E-06 | 1.19E-01 | 1.95E-05 | 2.51E-10 | 0.00E+00 | 8.42E-06 | 3.94E-07 | 0.00E+00 | 1.05E-05 | 0.00E+00 | 1.45E+00 |
| 216-T-7 | 1954 | 9.38E-05 | 3.76E-04 | 0.00E+00 | 2.49E-05 | 2.88E-01 | 4.85E-05 | 6.17E-10 | 0.00E+00 | 1.95E-05 | 9.31E-07 | 0.00E+00 | 2.60E-05 | 0.00E+00 | 4.89E+00 |
| 216-T-7 | 1955 | 1.17E-04 | 4.42E-04 | 0.00E+00 | 3.12E-05 | 3.50E-01 | 6.03E-05 | 7.59E-10 | 0.00E+00 | 2.42E-05 | 1.16E-06 | 0.00E+00 | 3.23E-05 | 0.00E+00 | 6.21E+00 |
| 216-T-8 | 1950 | 3.73E-05 | 3.03E-03 | 9.24E-08 | 4.65E-07 | 2.44E+01 | 8.10E-05 | 1.88E-07 | 8.82E-09 | 7.46E-03 | 3.30E-04 | 1.01E-04 | 7.61E-03 | 0.00E+00 | 5.73E-04 |
| 216-T-8 | 1951 | 4.05E-05 | 3.10E-03 | 1.00E-07 | 5.04E-07 | 2.58E+01 | 8.77E-05 | 2.02E-07 | 9.56E-09 | 8.08E-03 | 3.58E-04 | 1.10E-04 | 8.25E-03 | 0.00E+00 | 6.20E-04 |
| 216-U-12 | 1965 | 7.74E-09 | 1.32E-04 | 1.40E-08 | 1.65E-11 | 3.12E+01 | 1.48E-04 | 2.00E-03 | 8.98E-02 | 6.80E-04 | 2.41E-09 | 4.21E-10 | 3.77E-17 | 1.13E-16 | 1.52E-13 |
| 216-U-13 | 1952 | 1.84E-07 | 1.34E-05 | 4.56E-10 | 2.30E-09 | 1.15E-01 | 4.00E-07 | 9.10E-10 | 4.36E-11 | 3.68E-05 | 1.63E-06 | 5.00E-07 | 3.76E-05 | 0.00E+00 | 2.83E-06 |
| 216-U-13 | 1953 | 2.21E-07 | 1.51E-05 | 5.47E-10 | 2.75E-09 | 1.34E-01 | 4.79E-07 | 1.08E-09 | 5.22E-11 | 4.41E-05 | 1.95E-06 | 5.99E-07 | 4.50E-05 | 0.00E+00 | 3.39E-06 |

ECF-HANFORD-20-0072, REV. 0

| Site Name | Discharge/ Decay- Corrected Year | C-14 | H-3 | I-129 | Np-237 | Sr-90 | Tc-99 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Am-241 | Pu-239 |
|---------------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 216-U-13 | 1954 | 2.21E-07 | 1.43E-05 | 5.47E-10 | 2.75E-09 | 1.31E-01 | 4.79E-07 | 1.07E-09 | 5.23E-11 | 4.41E-05 | 1.95E-06 | 5.99E-07 | 4.50E-05 | 0.00E+00 | 3.39E-06 |
| 216-U-13 | 1955 | 2.21E-07 | 1.35E-05 | 5.47E-10 | 2.75E-09 | 1.28E-01 | 4.79E-07 | 1.06E-09 | 5.23E-11 | 4.41E-05 | 1.95E-06 | 5.99E-07 | 4.50E-05 | 0.00E+00 | 3.39E-06 |
| 216-U-13 | 1956 | 3.68E-08 | 2.13E-06 | 9.10E-11 | 4.58E-10 | 2.08E-02 | 7.98E-08 | 1.74E-10 | 8.71E-12 | 7.35E-06 | 3.25E-07 | 9.98E-08 | 7.50E-06 | 0.00E+00 | 5.64E-07 |
| 216-U-5 | 1952 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.55E-06 | 2.21E-07 | 1.84E-01 | 8.16E-03 | 2.50E-03 | 1.88E-01 | 0.00E+00 | 0.00E+00 |
| 216-U-6 | 1952 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.55E-06 | 2.21E-07 | 1.84E-01 | 8.16E-03 | 2.50E-03 | 1.88E-01 | 0.00E+00 | 0.00E+00 |
| 216-Z-7 | 1965 | 4.46E-06 | 3.31E-03 | 0.00E+00 | 1.34E-07 | 5.33E-01 | 7.92E-05 | 1.04E-02 | 4.34E-01 | 3.15E-02 | 1.22E-03 | 1.38E-03 | 2.12E-02 | 0.00E+00 | 8.54E+00 |
| 216-Z-7 | 1966 | 1.04E-05 | 7.29E-03 | 0.00E+00 | 3.16E-07 | 1.21E+00 | 1.84E-04 | 2.40E-02 | 1.01E+00 | 7.33E-02 | 2.83E-03 | 3.21E-03 | 4.93E-02 | 0.00E+00 | 1.99E+01 |
| UPR-200-E-87 | 1949 | 3.61E-06 | 2.83E-08 | 1.43E-10 | 3.88E-06 | 1.97E-03 | 3.24E-07 | 9.02E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.29E-08 | 0.00E+00 | 2.76E+00 |
| UPR-200-W-102 | 1972 | 5.68E-06 | 6.61E-07 | 0.00E+00 | 6.34E-06 | 2.00E-03 | 5.20E-07 | 1.22E-12 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.16E-08 | 0.00E+00 | 4.04E+00 |

^a - The 241-BX-102 results were removed from the SIM Solids output, and they were allocated to the liquids only.

Table 7-6. Standard Deviation of Cumulative Inventory of Radionuclides (Ci) for Entrained Solids Back Decayed to the Discharge Year (6 sheets)^a

| Site name | Discharge/ Decay- Corrected Year | C-14 | H-3 | I-129 | Np-237 | Sr-90 | Tc-99 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Am-241 | Pu-239 |
|-----------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 216-A-1 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.83E-07 | 4.02E-08 | 4.47E-02 | 2.00E-03 | 5.90E-04 | 4.56E-02 | 0.00E+00 | 0.00E+00 |
| 216-A-18 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.38E-06 | 1.99E-07 | 2.22E-01 | 9.94E-03 | 2.93E-03 | 2.26E-01 | 0.00E+00 | 0.00E+00 |
| 216-A-19 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.46E-04 | 1.10E-05 | 1.29E+01 | 5.78E-01 | 1.69E-01 | 1.31E+01 | 0.00E+00 | 0.00E+00 |
| 216-A-20 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.08E-06 | 1.86E-07 | 2.06E-01 | 9.24E-03 | 2.72E-03 | 2.10E-01 | 0.00E+00 | 0.00E+00 |
| 216-A-25 | 1964 | 1.98E-05 | 5.45E-04 | 6.50E-08 | 2.02E-06 | 4.18E+02 | 1.08E-03 | 8.09E-09 | 6.74E-09 | 7.17E-05 | 3.08E-06 | 1.61E-06 | 7.39E-05 | 7.10E-02 | 1.49E-02 |
| 216-A-27 | 1965 | 8.00E-07 | 5.66E-04 | 0.00E+00 | 2.29E-08 | 8.80E-02 | 1.28E-05 | 1.98E-03 | 7.71E-02 | 6.95E-03 | 2.71E-04 | 2.98E-04 | 4.67E-03 | 0.00E+00 | 1.23E+00 |
| 216-A-27 | 1966 | 8.00E-07 | 5.35E-04 | 0.00E+00 | 2.33E-08 | 8.59E-02 | 1.28E-05 | 1.96E-03 | 7.71E-02 | 6.95E-03 | 2.71E-04 | 2.98E-04 | 4.67E-03 | 0.00E+00 | 1.23E+00 |
| 216-A-27 | 1967 | 8.00E-07 | 5.06E-04 | 0.00E+00 | 2.36E-08 | 8.38E-02 | 1.28E-05 | 1.94E-03 | 7.71E-02 | 6.95E-03 | 2.71E-04 | 2.98E-04 | 4.67E-03 | 0.00E+00 | 1.22E+00 |
| 216-A-27 | 1968 | 8.00E-07 | 4.78E-04 | 0.00E+00 | 2.40E-08 | 8.18E-02 | 1.28E-05 | 1.92E-03 | 7.71E-02 | 6.95E-03 | 2.71E-04 | 2.98E-04 | 4.67E-03 | 0.00E+00 | 1.22E+00 |
| 216-A-27 | 1969 | 7.99E-07 | 4.52E-04 | 0.00E+00 | 2.43E-08 | 7.99E-02 | 1.28E-05 | 1.90E-03 | 7.71E-02 | 6.95E-03 | 2.71E-04 | 2.98E-04 | 4.67E-03 | 0.00E+00 | 1.22E+00 |
| 216-A-27 | 1970 | 7.99E-07 | 4.27E-04 | 0.00E+00 | 2.46E-08 | 7.80E-02 | 1.28E-05 | 1.88E-03 | 7.71E-02 | 6.95E-03 | 2.71E-04 | 2.98E-04 | 4.67E-03 | 0.00E+00 | 1.22E+00 |
| 216-A-28 | 1960 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.91E-06 | 1.92E-07 | 2.21E-01 | 1.00E-02 | 2.70E-03 | 2.35E-01 | 0.00E+00 | 0.00E+00 |
| 216-A-30 | 1961 | 6.26E-07 | 5.55E-04 | 0.00E+00 | 1.66E-08 | 7.58E-02 | 1.00E-05 | 1.61E-03 | 6.04E-02 | 5.44E-03 | 2.12E-04 | 2.33E-04 | 3.66E-03 | 0.00E+00 | 9.59E-01 |
| 216-A-30 | 1962 | 6.26E-07 | 5.25E-04 | 0.00E+00 | 1.70E-08 | 7.40E-02 | 1.00E-05 | 1.60E-03 | 6.04E-02 | 5.44E-03 | 2.12E-04 | 2.33E-04 | 3.66E-03 | 0.00E+00 | 9.59E-01 |
| 216-A-30 | 1963 | 9.37E-07 | 7.29E-04 | 0.00E+00 | 2.53E-08 | 1.12E-01 | 1.62E-05 | 2.99E-03 | 8.99E-02 | 8.83E-03 | 3.49E-04 | 3.44E-04 | 6.23E-03 | 0.00E+00 | 1.34E+00 |
| 216-A-30 | 1964 | 9.37E-07 | 6.89E-04 | 0.00E+00 | 2.58E-08 | 1.09E-01 | 1.62E-05 | 2.96E-03 | 8.99E-02 | 8.83E-03 | 3.49E-04 | 3.44E-04 | 6.23E-03 | 0.00E+00 | 1.34E+00 |
| 216-A-30 | 1965 | 9.36E-07 | 6.51E-04 | 0.00E+00 | 2.63E-08 | 1.07E-01 | 1.62E-05 | 2.93E-03 | 8.99E-02 | 8.83E-03 | 3.49E-04 | 3.44E-04 | 6.23E-03 | 0.00E+00 | 1.34E+00 |
| 216-A-30 | 1966 | 9.36E-07 | 6.16E-04 | 0.00E+00 | 2.67E-08 | 1.04E-01 | 1.62E-05 | 2.90E-03 | 8.99E-02 | 8.83E-03 | 3.49E-04 | 3.44E-04 | 6.23E-03 | 0.00E+00 | 1.34E+00 |
| 216-A-30 | 1967 | 9.36E-07 | 5.82E-04 | 0.00E+00 | 2.71E-08 | 1.02E-01 | 1.62E-05 | 2.87E-03 | 8.99E-02 | 8.83E-03 | 3.49E-04 | 3.44E-04 | 6.23E-03 | 0.00E+00 | 1.34E+00 |
| 216-A-30 | 1968 | 1.10E-06 | 6.06E-04 | 0.00E+00 | 2.80E-08 | 1.07E-01 | 1.72E-05 | 2.42E-03 | 9.26E-02 | 6.82E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1969 | 1.10E-06 | 5.73E-04 | 0.00E+00 | 2.85E-08 | 1.04E-01 | 1.72E-05 | 2.40E-03 | 9.26E-02 | 6.82E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1970 | 1.10E-06 | 5.41E-04 | 0.00E+00 | 2.89E-08 | 1.02E-01 | 1.72E-05 | 2.37E-03 | 9.26E-02 | 6.83E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1971 | 1.10E-06 | 5.12E-04 | 0.00E+00 | 2.93E-08 | 9.94E-02 | 1.72E-05 | 2.35E-03 | 9.26E-02 | 6.83E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1972 | 1.10E-06 | 4.84E-04 | 0.00E+00 | 2.97E-08 | 9.71E-02 | 1.72E-05 | 2.33E-03 | 9.26E-02 | 6.83E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1973 | 1.10E-06 | 4.57E-04 | 0.00E+00 | 3.01E-08 | 9.47E-02 | 1.72E-05 | 2.30E-03 | 9.26E-02 | 6.83E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1976 | 1.10E-06 | 3.86E-04 | 0.00E+00 | 3.11E-08 | 8.81E-02 | 1.72E-05 | 2.23E-03 | 9.26E-02 | 6.83E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1977 | 1.10E-06 | 3.65E-04 | 0.00E+00 | 3.14E-08 | 8.60E-02 | 1.72E-05 | 2.21E-03 | 9.26E-02 | 6.83E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1978 | 1.10E-06 | 3.45E-04 | 0.00E+00 | 3.17E-08 | 8.40E-02 | 1.72E-05 | 2.19E-03 | 9.26E-02 | 6.83E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1979 | 1.10E-06 | 3.26E-04 | 0.00E+00 | 3.20E-08 | 8.20E-02 | 1.72E-05 | 2.17E-03 | 9.26E-02 | 6.83E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1980 | 1.10E-06 | 3.08E-04 | 0.00E+00 | 3.22E-08 | 8.01E-02 | 1.72E-05 | 2.15E-03 | 9.26E-02 | 6.83E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1981 | 1.10E-06 | 2.92E-04 | 0.00E+00 | 3.25E-08 | 7.81E-02 | 1.72E-05 | 2.13E-03 | 9.26E-02 | 6.83E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1982 | 1.10E-06 | 2.76E-04 | 0.00E+00 | 3.27E-08 | 7.63E-02 | 1.72E-05 | 2.10E-03 | 9.26E-02 | 6.83E-03 | 2.75E-04 | 3.42E-04 | 4.71E-03 | 0.00E+00 | 1.82E+00 |
| 216-A-30 | 1983 | 1.14E-06 | 3.26E-04 | 0.00E+00 | 3.89E-08 | 9.05E-02 | 2.02E-05 | 2.46E-03 | 1.12E-01 | 8.05E-03 | 3.11E-04 | 3.50E-04 | 5.41E-03 | 0.00E+00 | 1.72E+00 |
| 216-A-30 | 1984 | 1.14E-06 | 3.08E-04 | 0.00E+00 | 3.92E-08 | 8.84E-02 | 2.02E-05 | 2.43E-03 | 1.12E-01 | 8.05E-03 | 3.11E-04 | 3.50E-04 | 5.41E-03 | 0.00E+00 | 1.72E+00 |
| 216-A-30 | 1985 | 2.27E-06 | 5.83E-04 | 0.00E+00 | 7.89E-08 | 1.73E-01 | 4.03E-05 | 4.82E-03 | 2.24E-01 | 1.61E-02 | 6.22E-04 | 7.01E-04 | 1.08E-02 | 0.00E+00 | 3.44E+00 |
| 216-A-30 | 1986 | 2.27E-06 | 5.51E-04 | 0.00E+00 | 7.95E-08 | 1.68E-01 | 4.03E-05 | 4.77E-03 | 2.24E-01 | 1.61E-02 | 6.22E-04 | 7.01E-04 | 1.08E-02 | 0.00E+00 | 3.44E+00 |

ECF-HANFORD-20-0072, REV. 0

| Site name | Discharge/ Decay- Corrected Year | C-14 | H-3 | I-129 | Np-237 | Sr-90 | Tc-99 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Am-241 | Pu-239 |
|-----------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 216-A-30 | 1987 | 2.27E-06 | 5.21E-04 | 0.00E+00 | 8.00E-08 | 1.64E-01 | 4.03E-05 | 4.72E-03 | 2.24E-01 | 1.61E-02 | 6.22E-04 | 7.01E-04 | 1.08E-02 | 0.00E+00 | 3.44E+00 |
| 216-A-30 | 1988 | 2.27E-06 | 4.92E-04 | 0.00E+00 | 8.05E-08 | 1.61E-01 | 4.03E-05 | 4.67E-03 | 2.24E-01 | 1.61E-02 | 6.22E-04 | 7.01E-04 | 1.08E-02 | 0.00E+00 | 3.44E+00 |
| 216-A-30 | 1989 | 2.27E-06 | 4.65E-04 | 0.00E+00 | 8.10E-08 | 1.57E-01 | 4.03E-05 | 4.63E-03 | 2.24E-01 | 1.61E-02 | 6.22E-04 | 7.01E-04 | 1.08E-02 | 0.00E+00 | 3.44E+00 |
| 216-A-30 | 1990 | 2.27E-06 | 4.40E-04 | 0.00E+00 | 8.15E-08 | 1.53E-01 | 4.03E-05 | 4.58E-03 | 2.24E-01 | 1.61E-02 | 6.22E-04 | 7.01E-04 | 1.08E-02 | 0.00E+00 | 3.44E+00 |
| 216-A-30 | 1991 | 2.27E-06 | 4.16E-04 | 0.00E+00 | 8.19E-08 | 1.49E-01 | 4.03E-05 | 4.53E-03 | 2.24E-01 | 1.61E-02 | 6.22E-04 | 7.01E-04 | 1.08E-02 | 0.00E+00 | 3.44E+00 |
| 216-A-4 | 1955 | 2.71E-07 | 3.39E-04 | 0.00E+00 | 6.23E-09 | 3.85E-02 | 4.44E-06 | 7.31E-04 | 2.61E-02 | 2.26E-03 | 8.80E-05 | 9.73E-05 | 1.52E-03 | 0.00E+00 | 4.12E-01 |
| 216-A-4 | 1956 | 2.71E-07 | 3.21E-04 | 0.00E+00 | 6.42E-09 | 3.76E-02 | 4.44E-06 | 7.23E-04 | 2.61E-02 | 2.26E-03 | 8.80E-05 | 9.73E-05 | 1.52E-03 | 0.00E+00 | 4.12E-01 |
| 216-A-4 | 1957 | 2.71E-07 | 3.03E-04 | 0.00E+00 | 6.61E-09 | 3.67E-02 | 4.44E-06 | 7.16E-04 | 2.61E-02 | 2.26E-03 | 8.80E-05 | 9.73E-05 | 1.52E-03 | 0.00E+00 | 4.12E-01 |
| 216-A-4 | 1958 | 2.71E-07 | 2.87E-04 | 0.00E+00 | 6.78E-09 | 3.58E-02 | 4.44E-06 | 7.09E-04 | 2.61E-02 | 2.26E-03 | 8.80E-05 | 9.73E-05 | 1.52E-03 | 0.00E+00 | 4.12E-01 |
| 216-A-6 | 1955 | 2.51E-08 | 3.11E-05 | 0.00E+00 | 5.67E-10 | 3.50E-03 | 4.02E-07 | 6.85E-05 | 2.41E-03 | 2.17E-04 | 8.47E-06 | 9.32E-06 | 1.46E-04 | 0.00E+00 | 3.84E-02 |
| 216-A-6 | 1956 | 2.51E-08 | 2.94E-05 | 0.00E+00 | 5.85E-10 | 3.42E-03 | 4.02E-07 | 6.78E-05 | 2.41E-03 | 2.17E-04 | 8.47E-06 | 9.32E-06 | 1.46E-04 | 0.00E+00 | 3.84E-02 |
| 216-A-6 | 1957 | 2.51E-08 | 2.78E-05 | 0.00E+00 | 6.03E-10 | 3.34E-03 | 4.02E-07 | 6.71E-05 | 2.41E-03 | 2.17E-04 | 8.47E-06 | 9.32E-06 | 1.46E-04 | 0.00E+00 | 3.84E-02 |
| 216-A-6 | 1958 | 2.51E-08 | 2.63E-05 | 0.00E+00 | 6.19E-10 | 3.26E-03 | 4.02E-07 | 6.64E-05 | 2.41E-03 | 2.17E-04 | 8.47E-06 | 9.32E-06 | 1.46E-04 | 0.00E+00 | 3.84E-02 |
| 216-A-6 | 1959 | 2.51E-08 | 2.48E-05 | 0.00E+00 | 6.35E-10 | 3.18E-03 | 4.02E-07 | 6.58E-05 | 2.41E-03 | 2.17E-04 | 8.47E-06 | 9.32E-06 | 1.46E-04 | 0.00E+00 | 3.84E-02 |
| 216-A-6 | 1960 | 2.51E-08 | 2.35E-05 | 0.00E+00 | 6.51E-10 | 3.11E-03 | 4.02E-07 | 6.51E-05 | 2.41E-03 | 2.17E-04 | 8.47E-06 | 9.32E-06 | 1.46E-04 | 0.00E+00 | 3.84E-02 |
| 216-A-6 | 1961 | 2.50E-08 | 2.22E-05 | 0.00E+00 | 6.65E-10 | 3.03E-03 | 4.02E-07 | 6.45E-05 | 2.41E-03 | 2.17E-04 | 8.48E-06 | 9.32E-06 | 1.46E-04 | 0.00E+00 | 3.84E-02 |
| 216-A-6 | 1966 | 3.75E-08 | 2.46E-05 | 0.00E+00 | 1.07E-09 | 4.17E-03 | 6.47E-07 | 1.16E-04 | 3.60E-03 | 3.53E-04 | 1.39E-05 | 1.37E-05 | 2.49E-04 | 0.00E+00 | 5.37E-02 |
| 216-A-6 | 1967 | 3.74E-08 | 2.33E-05 | 0.00E+00 | 1.08E-09 | 4.07E-03 | 6.47E-07 | 1.15E-04 | 3.60E-03 | 3.53E-04 | 1.39E-05 | 1.37E-05 | 2.49E-04 | 0.00E+00 | 5.37E-02 |
| 216-A-6 | 1968 | 4.41E-08 | 2.42E-05 | 0.00E+00 | 1.12E-09 | 4.27E-03 | 6.88E-07 | 9.69E-05 | 3.70E-03 | 2.73E-04 | 1.10E-05 | 1.37E-05 | 1.88E-04 | 0.00E+00 | 7.27E-02 |
| 216-A-6 | 1969 | 4.41E-08 | 2.29E-05 | 0.00E+00 | 1.14E-09 | 4.17E-03 | 6.88E-07 | 9.59E-05 | 3.70E-03 | 2.73E-04 | 1.10E-05 | 1.37E-05 | 1.88E-04 | 0.00E+00 | 7.27E-02 |
| 216-A-6 | 1970 | 4.41E-08 | 2.17E-05 | 0.00E+00 | 1.16E-09 | 4.07E-03 | 6.88E-07 | 9.50E-05 | 3.70E-03 | 2.73E-04 | 1.10E-05 | 1.37E-05 | 1.88E-04 | 0.00E+00 | 7.27E-02 |
| 216-A-9 | 1966 | 1.51E-04 | 9.78E-02 | 0.00E+00 | 4.24E-06 | 1.66E+01 | 2.59E-03 | 4.94E-01 | 1.45E+01 | 1.50E+00 | 5.94E-02 | 5.75E-02 | 1.06E+00 | 0.00E+00 | 2.14E+02 |
| 216-B-12 | 1967 | 1.78E-04 | 5.74E-03 | 4.39E-07 | 2.21E-06 | 7.83E+01 | 3.86E-04 | 7.58E-07 | 4.20E-08 | 4.58E-02 | 2.06E-03 | 4.85E-04 | 4.66E-02 | 9.13E-05 | 2.68E-03 |
| 216-B-20 | 1956 | 1.57E-04 | 5.47E-02 | 4.48E-06 | 1.69E-05 | 4.14E+02 | 2.08E-03 | 2.76E-08 | 0.00E+00 | 1.82E-03 | 8.27E-05 | 1.63E-05 | 1.85E-03 | 0.00E+00 | 7.27E-02 |
| 216-B-26 | 1956 | 3.70E-05 | 1.16E-02 | 7.39E-07 | 4.57E-06 | 4.43E+02 | 5.77E-04 | 3.08E-08 | 7.25E-10 | 2.03E-03 | 9.23E-05 | 1.82E-05 | 2.07E-03 | 0.00E+00 | 3.71E-02 |
| 216-B-26 | 1957 | 4.90E-05 | 1.46E-02 | 9.79E-07 | 6.06E-06 | 5.74E+02 | 7.65E-04 | 4.05E-08 | 9.88E-10 | 2.69E-03 | 1.22E-04 | 2.41E-05 | 2.74E-03 | 0.00E+00 | 4.92E-02 |
| 216-B-35 | 1954 | 1.10E-04 | 1.13E-01 | 2.37E-06 | 6.24E-06 | 1.50E+01 | 2.72E-04 | 2.99E-08 | 1.57E-10 | 1.33E-03 | 5.97E-05 | 1.53E-05 | 1.36E-03 | 0.00E+00 | 3.80E-01 |
| 216-B-36 | 1954 | 2.01E-04 | 2.07E-01 | 4.34E-06 | 1.14E-05 | 2.75E+01 | 4.99E-04 | 5.47E-08 | 2.88E-10 | 2.44E-03 | 1.09E-04 | 2.81E-05 | 2.48E-03 | 0.00E+00 | 6.96E-01 |
| 216-B-37 | 1954 | 4.47E-04 | 4.60E-01 | 9.66E-06 | 2.54E-05 | 6.13E+01 | 1.11E-03 | 1.22E-07 | 6.41E-10 | 5.43E-03 | 2.43E-04 | 6.25E-05 | 5.53E-03 | 0.00E+00 | 1.55E+00 |
| 216-B-38 | 1954 | 1.48E-04 | 1.52E-01 | 3.20E-06 | 8.42E-06 | 2.03E+01 | 3.68E-04 | 4.03E-08 | 2.12E-10 | 1.80E-03 | 8.05E-05 | 2.07E-05 | 1.83E-03 | 0.00E+00 | 5.13E-01 |
| 216-B-39 | 1953 | 8.07E-05 | 8.79E-02 | 1.74E-06 | 4.59E-06 | 1.13E+01 | 2.00E-04 | 2.22E-08 | 9.57E-11 | 9.80E-04 | 4.39E-05 | 1.13E-05 | 9.98E-04 | 0.00E+00 | 2.80E-01 |
| 216-B-39 | 1954 | 7.87E-05 | 8.09E-02 | 1.70E-06 | 4.48E-06 | 1.08E+01 | 1.95E-04 | 2.14E-08 | 1.13E-10 | 9.55E-04 | 4.28E-05 | 1.10E-05 | 9.73E-04 | 0.00E+00 | 2.73E-01 |
| 216-B-40 | 1954 | 1.70E-04 | 1.75E-01 | 3.67E-06 | 9.66E-06 | 2.33E+01 | 4.21E-04 | 4.62E-08 | 2.43E-10 | 2.06E-03 | 9.23E-05 | 2.37E-05 | 2.10E-03 | 0.00E+00 | 5.88E-01 |
| 216-B-41 | 1954 | 1.49E-04 | 1.53E-01 | 3.22E-06 | 8.48E-06 | 2.04E+01 | 3.70E-04 | 4.06E-08 | 2.14E-10 | 1.81E-03 | 8.11E-05 | 2.08E-05 | 1.84E-03 | 0.00E+00 | 5.16E-01 |
| 216-B-45 | 1955 | 7.68E-05 | 2.52E-02 | 1.55E-06 | 9.56E-06 | 9.06E+02 | 1.20E-03 | 6.37E-08 | 1.41E-09 | 3.14E-03 | 1.40E-04 | 3.69E-05 | 3.20E-03 | 0.00E+00 | 6.89E-02 |
| 216-B-5 | 1946 | 2.19E-05 | 2.11E-07 | 8.84E-10 | 2.38E-05 | 1.29E-02 | 1.98E-06 | 5.70E-12 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.58E-07 | 0.00E+00 | 1.56E+01 |
| 216-B-53A | 1965 | 1.50E-06 | 1.04E-03 | 0.00E+00 | 4.20E-08 | 1.58E-01 | 2.28E-05 | 3.79E-03 | 1.44E-01 | 1.39E-02 | 5.43E-04 | 5.93E-04 | 9.35E-03 | 0.00E+00 | 2.31E+00 |
| 216-B-53B | 1963 | 4.35E-07 | 3.37E-04 | 0.00E+00 | 1.18E-08 | 4.83E-02 | 6.64E-06 | 1.12E-03 | 4.18E-02 | 4.04E-03 | 1.58E-04 | 1.72E-04 | 2.72E-03 | 0.00E+00 | 6.72E-01 |
| 216-B-54 | 1965 | 4.35E-07 | 3.01E-04 | 0.00E+00 | 1.22E-08 | 4.60E-02 | 6.64E-06 | 1.10E-03 | 4.18E-02 | 4.04E-03 | 1.58E-04 | 1.72E-04 | 2.72E-03 | 0.00E+00 | 6.72E-01 |

ECF-HANFORD-20-0072, REV. 0

| Site name | Discharge/ Decay- Corrected Year | C-14 | H-3 | I-129 | Np-237 | Sr-90 | Tc-99 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Am-241 | Pu-239 |
|-----------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 216-B-58 | 1965 | 3.48E-07 | 2.41E-04 | 0.00E+00 | 9.78E-09 | 3.68E-02 | 5.31E-06 | 8.81E-04 | 3.34E-02 | 3.23E-03 | 1.26E-04 | 1.38E-04 | 2.17E-03 | 0.00E+00 | 5.37E-01 |
| 216-B-60 | 1968 | 8.12E-08 | 4.46E-05 | 0.00E+00 | 2.06E-09 | 7.86E-03 | 1.27E-06 | 1.78E-04 | 6.81E-03 | 5.02E-04 | 2.03E-05 | 2.52E-05 | 3.46E-04 | 0.00E+00 | 1.34E-01 |
| 216-B-7&B | 1966 | 2.00E-05 | 1.23E-02 | 0.00E+00 | 4.90E-07 | 2.03E+00 | 3.11E-04 | 4.48E-02 | 1.68E+00 | 1.24E-01 | 4.98E-03 | 6.20E-03 | 8.52E-02 | 0.00E+00 | 3.30E+01 |
| 216-B-7&B | 1967 | 4.45E-06 | 2.51E-03 | 2.29E-09 | 1.69E-07 | 1.59E+00 | 7.75E-05 | 9.59E-03 | 3.63E-01 | 2.67E-02 | 1.08E-03 | 1.34E-03 | 1.84E-02 | 0.00E+00 | 7.13E+00 |
| 216-C-1 | 1955 | 4.76E-08 | 1.31E-06 | 9.96E-11 | 6.18E-09 | 8.89E-02 | 1.66E-06 | 7.66E-10 | 1.92E-09 | 7.69E-06 | 3.29E-07 | 1.79E-07 | 7.71E-06 | 0.00E+00 | 2.89E-03 |
| 216-C-1 | 1956 | 1.91E-07 | 4.96E-06 | 3.98E-10 | 2.48E-08 | 3.47E-01 | 6.62E-06 | 1.22E-06 | 5.69E-08 | 6.18E-02 | 2.77E-03 | 8.17E-04 | 6.30E-02 | 0.00E+00 | 1.16E-02 |
| 216-C-1 | 1957 | 3.23E-07 | 3.59E-04 | 0.00E+00 | 7.77E-09 | 4.31E-02 | 5.18E-06 | 8.66E-04 | 3.11E-02 | 2.80E-03 | 1.09E-04 | 1.20E-04 | 1.89E-03 | 0.00E+00 | 4.95E-01 |
| 216-C-5 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.10E-07 | 4.91E-09 | 5.75E-03 | 2.58E-04 | 7.57E-05 | 5.87E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1957 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.25E-06 | 4.09E-08 | 4.72E-02 | 2.08E-03 | 7.31E-04 | 4.83E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1958 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.40E-06 | 8.68E-08 | 1.02E-01 | 4.50E-03 | 1.35E-03 | 1.01E-01 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1959 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.48E-08 | 2.37E-09 | 2.77E-03 | 1.23E-04 | 3.67E-05 | 2.75E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1960 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.99E-08 | 1.10E-09 | 1.29E-03 | 5.72E-05 | 1.71E-05 | 1.28E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1961 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.96E-08 | 1.10E-09 | 1.29E-03 | 5.72E-05 | 1.71E-05 | 1.28E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1962 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.38E-09 | 3.15E-10 | 3.70E-04 | 1.64E-05 | 4.90E-06 | 3.67E-04 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1963 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.30E-07 | 3.15E-08 | 3.70E-02 | 1.64E-03 | 4.90E-04 | 3.67E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1964 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.21E-08 | 3.15E-09 | 3.70E-03 | 1.64E-04 | 4.90E-05 | 3.67E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1965 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.85E-08 | 1.10E-09 | 1.29E-03 | 5.72E-05 | 1.71E-05 | 1.28E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-16P | 1966 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.05E-08 | 3.15E-09 | 3.70E-03 | 1.64E-04 | 4.90E-05 | 3.67E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-17 | 1952 | 1.63E-06 | 4.47E-04 | 4.60E-08 | 1.97E-07 | 6.61E+00 | 2.83E-05 | 5.12E-10 | 1.20E-09 | 7.24E-06 | 3.11E-07 | 1.62E-07 | 7.43E-06 | 5.30E-04 | 8.77E-04 |
| 216-S-17 | 1953 | 1.63E-06 | 4.23E-04 | 4.60E-08 | 1.97E-07 | 6.45E+00 | 2.83E-05 | 5.06E-10 | 1.20E-09 | 7.24E-06 | 3.11E-07 | 1.62E-07 | 7.43E-06 | 5.42E-04 | 8.77E-04 |
| 216-S-17 | 1954 | 1.63E-06 | 4.00E-04 | 4.60E-08 | 1.97E-07 | 6.30E+00 | 2.83E-05 | 5.01E-10 | 1.20E-09 | 7.24E-06 | 3.11E-07 | 1.62E-07 | 7.43E-06 | 5.54E-04 | 8.77E-04 |
| 216-S-20 | 1952 | 5.44E-08 | 7.97E-05 | 0.00E+00 | 1.09E-09 | 8.14E-03 | 8.67E-07 | 1.53E-04 | 5.23E-03 | 4.74E-04 | 1.85E-05 | 2.03E-05 | 3.19E-04 | 0.00E+00 | 8.32E-02 |
| 216-S-20 | 1953 | 6.24E-08 | 8.65E-05 | 0.00E+00 | 1.31E-09 | 9.12E-03 | 9.96E-07 | 1.74E-04 | 6.01E-03 | 5.44E-04 | 2.12E-05 | 2.33E-05 | 3.66E-04 | 0.00E+00 | 9.56E-02 |
| 216-S-20 | 1954 | 1.56E-06 | 2.04E-03 | 0.00E+00 | 3.40E-08 | 2.23E-01 | 2.49E-05 | 4.31E-03 | 1.50E-01 | 1.36E-02 | 5.31E-04 | 5.83E-04 | 9.16E-03 | 0.00E+00 | 2.39E+00 |
| 216-S-21 | 1968 | 1.41E-04 | 2.14E-02 | 7.54E-06 | 1.89E-05 | 3.60E+00 | 4.90E-03 | 9.30E-08 | 3.14E-06 | 8.39E-06 | 3.39E-07 | 2.06E-07 | 7.07E-06 | 4.86E-03 | 3.61E-03 |
| 216-S-21 | 1969 | 1.41E-04 | 2.03E-02 | 7.54E-06 | 1.89E-05 | 3.51E+00 | 4.90E-03 | 9.20E-08 | 3.14E-06 | 8.39E-06 | 3.39E-07 | 2.06E-07 | 7.07E-06 | 4.90E-03 | 3.61E-03 |
| 216-S-5 | 1954 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.25E-06 | 7.17E-08 | 8.25E-02 | 3.64E-03 | 1.28E-03 | 8.46E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-5 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.23E-06 | 7.17E-08 | 8.25E-02 | 3.64E-03 | 1.28E-03 | 8.46E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-5 | 1956 | 3.26E-05 | 7.14E-03 | 9.20E-07 | 3.95E-06 | 1.20E+02 | 5.67E-04 | 2.21E-06 | 7.51E-08 | 8.25E-02 | 3.64E-03 | 1.28E-03 | 8.46E-02 | 1.15E-02 | 1.75E-02 |
| 216-S-6 | 1954 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.82E-07 | 1.54E-08 | 1.77E-02 | 7.81E-04 | 2.74E-04 | 1.81E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-6 | 1955 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.91E-06 | 6.14E-08 | 7.08E-02 | 3.12E-03 | 1.10E-03 | 7.25E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-6 | 1956 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.21E-06 | 7.17E-08 | 8.25E-02 | 3.64E-03 | 1.28E-03 | 8.46E-02 | 0.00E+00 | 0.00E+00 |
| 216-S-6 | 1957 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.56E-07 | 5.12E-09 | 5.90E-03 | 2.60E-04 | 9.14E-05 | 6.04E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-6 | 1958 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.47E-07 | 8.19E-09 | 9.43E-03 | 4.16E-04 | 1.46E-04 | 9.67E-03 | 0.00E+00 | 0.00E+00 |
| 216-S-6 | 1959 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.08E-07 | 3.94E-09 | 4.62E-03 | 2.04E-04 | 6.12E-05 | 4.58E-03 | 0.00E+00 | 0.00E+00 |
| 216-T-12 | 1954 | 5.40E-07 | 5.55E-04 | 1.17E-08 | 3.07E-08 | 7.39E-02 | 1.34E-06 | 1.47E-10 | 7.75E-13 | 6.49E-06 | 2.91E-07 | 7.54E-08 | 6.62E-06 | 0.00E+00 | 1.86E-03 |
| 216-T-14 | 1954 | 1.04E-04 | 1.07E-01 | 2.25E-06 | 5.92E-06 | 1.43E+01 | 2.59E-04 | 2.84E-08 | 1.49E-10 | 1.26E-03 | 5.66E-05 | 1.45E-05 | 1.29E-03 | 0.00E+00 | 3.61E-01 |
| 216-T-15 | 1954 | 1.08E-04 | 1.11E-01 | 2.33E-06 | 6.14E-06 | 1.48E+01 | 2.68E-04 | 2.94E-08 | 1.55E-10 | 1.31E-03 | 5.87E-05 | 1.51E-05 | 1.33E-03 | 0.00E+00 | 3.74E-01 |
| 216-T-16 | 1954 | 1.06E-04 | 1.09E-01 | 2.28E-06 | 6.01E-06 | 1.45E+01 | 2.62E-04 | 2.88E-08 | 1.51E-10 | 1.28E-03 | 5.74E-05 | 1.48E-05 | 1.31E-03 | 0.00E+00 | 3.66E-01 |

ECF-HANFORD-20-0072, REV. 0

| Site name | Discharge/ Decay- Corrected Year | C-14 | H-3 | I-129 | Np-237 | Sr-90 | Tc-99 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Am-241 | Pu-239 |
|-----------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 216-T-17 | 1954 | 8.13E-05 | 8.36E-02 | 1.76E-06 | 4.62E-06 | 1.11E+01 | 2.02E-04 | 2.21E-08 | 1.17E-10 | 9.86E-04 | 4.42E-05 | 1.14E-05 | 1.00E-03 | 0.00E+00 | 2.81E-01 |
| 216-T-18 | 1953 | 6.75E-04 | 8.62E-03 | 3.72E-06 | 9.12E-06 | 1.00E+02 | 3.86E-04 | 1.18E-07 | 3.56E-09 | 9.45E-03 | 4.33E-04 | 6.61E-05 | 9.59E-03 | 0.00E+00 | 2.39E+00 |
| 216-T-19 | 1955 | 3.57E-06 | 1.46E-05 | 0.00E+00 | 7.92E-07 | 1.13E-02 | 1.92E-06 | 2.44E-11 | 0.00E+00 | 1.21E-06 | 5.58E-08 | 2.72E-09 | 1.33E-06 | 0.00E+00 | 6.63E-02 |
| 216-T-21 | 1954 | 4.79E-05 | 4.93E-02 | 1.04E-06 | 2.73E-06 | 6.57E+00 | 1.19E-04 | 1.31E-08 | 6.87E-11 | 5.82E-04 | 2.61E-05 | 6.70E-06 | 5.93E-04 | 0.00E+00 | 1.66E-01 |
| 216-T-22 | 1954 | 1.59E-04 | 1.64E-01 | 3.45E-06 | 9.07E-06 | 2.18E+01 | 3.96E-04 | 4.34E-08 | 2.29E-10 | 1.93E-03 | 8.67E-05 | 2.23E-05 | 1.97E-03 | 0.00E+00 | 5.52E-01 |
| 216-T-23 | 1954 | 1.54E-04 | 1.58E-01 | 3.32E-06 | 8.75E-06 | 2.11E+01 | 3.82E-04 | 4.19E-08 | 2.21E-10 | 1.87E-03 | 8.37E-05 | 2.15E-05 | 1.90E-03 | 0.00E+00 | 5.33E-01 |
| 216-T-24 | 1954 | 1.59E-04 | 1.64E-01 | 3.45E-06 | 9.07E-06 | 2.18E+01 | 3.96E-04 | 4.34E-08 | 2.29E-10 | 1.93E-03 | 8.67E-05 | 2.23E-05 | 1.97E-03 | 0.00E+00 | 5.52E-01 |
| 216-T-25 | 1954 | 3.09E-04 | 3.18E-01 | 6.68E-06 | 1.76E-05 | 4.24E+01 | 7.68E-04 | 8.42E-08 | 4.43E-10 | 3.75E-03 | 1.68E-04 | 4.32E-05 | 3.82E-03 | 0.00E+00 | 1.07E+00 |
| 216-T-26 | 1955 | 5.07E-03 | 5.79E-02 | 2.79E-05 | 6.86E-05 | 7.16E+02 | 2.90E-03 | 8.68E-07 | 2.73E-08 | 7.09E-02 | 3.25E-03 | 4.97E-04 | 7.19E-02 | 0.00E+00 | 1.79E+01 |
| 216-T-26 | 1956 | 2.28E-03 | 2.46E-02 | 1.26E-05 | 3.09E-05 | 3.15E+02 | 1.31E-03 | 3.87E-07 | 1.24E-08 | 3.19E-02 | 1.46E-03 | 2.24E-04 | 3.24E-02 | 0.00E+00 | 8.08E+00 |
| 216-T-27 | 1965 | 6.40E-07 | 4.53E-04 | 0.00E+00 | 1.83E-08 | 7.04E-02 | 1.03E-05 | 1.58E-03 | 6.17E-02 | 5.56E-03 | 2.17E-04 | 2.38E-04 | 3.74E-03 | 0.00E+00 | 9.80E-01 |
| 216-T-28 | 1965 | 2.40E-05 | 1.70E-02 | 0.00E+00 | 6.87E-07 | 2.64E+00 | 3.85E-04 | 5.93E-02 | 2.31E+00 | 2.08E-01 | 8.12E-03 | 8.94E-03 | 1.40E-01 | 0.00E+00 | 3.68E+01 |
| 216-T-3 | 1946 | 1.11E-05 | 1.07E-07 | 4.47E-10 | 1.20E-05 | 6.54E-03 | 1.00E-06 | 2.88E-12 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.81E-07 | 0.00E+00 | 7.88E+00 |
| 216-T-32 | 1946 | 1.14E-07 | 1.08E-09 | 4.57E-12 | 1.23E-07 | 6.71E-05 | 1.03E-08 | 2.96E-14 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.93E-09 | 0.00E+00 | 8.16E-02 |
| 216-T-32 | 1947 | 7.61E-07 | 6.80E-09 | 3.05E-11 | 8.22E-07 | 4.37E-04 | 6.86E-08 | 1.95E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.29E-08 | 0.00E+00 | 5.44E-01 |
| 216-T-32 | 1948 | 9.51E-07 | 8.04E-09 | 3.81E-11 | 1.03E-06 | 5.33E-04 | 8.57E-08 | 2.41E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.61E-08 | 0.00E+00 | 6.80E-01 |
| 216-T-32 | 1949 | 9.70E-07 | 7.75E-09 | 3.89E-11 | 1.05E-06 | 5.31E-04 | 8.74E-08 | 2.44E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.64E-08 | 0.00E+00 | 6.93E-01 |
| 216-T-32 | 1950 | 1.67E-06 | 6.89E-07 | 0.00E+00 | 1.85E-06 | 1.01E-03 | 1.52E-07 | 4.46E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.31E-08 | 0.00E+00 | 1.16E+00 |
| 216-T-32 | 1951 | 2.18E-06 | 8.52E-07 | 0.00E+00 | 2.42E-06 | 1.29E-03 | 1.99E-07 | 5.78E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.02E-08 | 0.00E+00 | 1.52E+00 |
| 216-T-32 | 1952 | 4.85E-07 | 1.79E-07 | 0.00E+00 | 5.38E-07 | 2.80E-04 | 4.42E-08 | 1.27E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.71E-09 | 0.00E+00 | 3.37E-01 |
| 216-T-33 | 1963 | 1.87E-06 | 1.46E-03 | 0.00E+00 | 5.07E-08 | 2.24E-01 | 3.23E-05 | 5.98E-03 | 1.80E-01 | 1.77E-02 | 6.97E-04 | 6.87E-04 | 1.25E-02 | 0.00E+00 | 2.68E+00 |
| 216-T-34 | 1966 | 6.02E-06 | 3.70E-03 | 0.00E+00 | 1.47E-07 | 6.11E-01 | 9.38E-05 | 1.35E-02 | 5.05E-01 | 3.72E-02 | 1.50E-03 | 1.87E-03 | 2.57E-02 | 0.00E+00 | 9.93E+00 |
| 216-T-36 | 1967 | 1.35E-05 | 8.39E-03 | 0.00E+00 | 3.91E-07 | 1.47E+00 | 2.33E-04 | 4.16E-02 | 1.30E+00 | 1.28E-01 | 5.05E-03 | 4.97E-03 | 9.03E-02 | 0.00E+00 | 1.94E+01 |
| 216-T-36 | 1968 | 5.37E-06 | 2.95E-03 | 0.00E+00 | 1.36E-07 | 5.20E-01 | 8.37E-05 | 1.18E-02 | 4.50E-01 | 3.32E-02 | 1.34E-03 | 1.67E-03 | 2.29E-02 | 0.00E+00 | 8.86E+00 |
| 216-T-36 | 1969 | 5.76E-07 | 2.99E-04 | 0.00E+00 | 1.48E-08 | 5.44E-02 | 8.98E-06 | 1.25E-03 | 4.83E-02 | 3.56E-03 | 1.44E-04 | 1.79E-04 | 2.46E-03 | 0.00E+00 | 9.50E-01 |
| 216-T-4A | 1957 | 4.87E-10 | 5.39E-07 | 0.00E+00 | 1.17E-11 | 6.47E-05 | 7.78E-09 | 1.31E-06 | 4.69E-05 | 4.24E-06 | 1.65E-07 | 1.82E-07 | 2.85E-06 | 0.00E+00 | 7.46E-04 |
| 216-T-4A | 1960 | 4.87E-10 | 4.56E-07 | 0.00E+00 | 1.26E-11 | 6.02E-05 | 7.78E-09 | 1.27E-06 | 4.69E-05 | 4.24E-06 | 1.65E-07 | 1.82E-07 | 2.85E-06 | 0.00E+00 | 7.46E-04 |
| 216-T-4A | 1961 | 4.87E-10 | 4.31E-07 | 0.00E+00 | 1.29E-11 | 5.87E-05 | 7.78E-09 | 1.25E-06 | 4.69E-05 | 4.24E-06 | 1.65E-07 | 1.82E-07 | 2.85E-06 | 0.00E+00 | 7.46E-04 |
| 216-T-4A | 1962 | 4.87E-10 | 4.07E-07 | 0.00E+00 | 1.32E-11 | 5.74E-05 | 7.78E-09 | 1.24E-06 | 4.69E-05 | 4.24E-06 | 1.65E-07 | 1.82E-07 | 2.85E-06 | 0.00E+00 | 7.45E-04 |
| 216-T-4A | 1963 | 7.34E-10 | 5.70E-07 | 0.00E+00 | 1.98E-11 | 8.76E-05 | 1.27E-08 | 2.35E-06 | 7.04E-05 | 6.93E-06 | 2.74E-07 | 2.70E-07 | 4.89E-06 | 0.00E+00 | 1.05E-03 |
| 216-T-4A | 1964 | 7.33E-10 | 5.39E-07 | 0.00E+00 | 2.02E-11 | 8.55E-05 | 1.27E-08 | 2.33E-06 | 7.04E-05 | 6.93E-06 | 2.74E-07 | 2.70E-07 | 4.89E-06 | 0.00E+00 | 1.05E-03 |
| 216-T-4A | 1965 | 7.33E-10 | 5.10E-07 | 0.00E+00 | 2.05E-11 | 8.35E-05 | 1.27E-08 | 2.30E-06 | 7.04E-05 | 6.93E-06 | 2.74E-07 | 2.70E-07 | 4.89E-06 | 0.00E+00 | 1.05E-03 |
| 216-T-4A | 1966 | 7.33E-10 | 4.82E-07 | 0.00E+00 | 2.09E-11 | 8.15E-05 | 1.27E-08 | 2.28E-06 | 7.04E-05 | 6.93E-06 | 2.74E-07 | 2.70E-07 | 4.89E-06 | 0.00E+00 | 1.05E-03 |
| 216-T-4A | 1967 | 7.33E-10 | 4.55E-07 | 0.00E+00 | 2.12E-11 | 7.96E-05 | 1.27E-08 | 2.26E-06 | 7.04E-05 | 6.93E-06 | 2.74E-07 | 2.70E-07 | 4.89E-06 | 0.00E+00 | 1.05E-03 |
| 216-T-4A | 1968 | 8.64E-10 | 4.75E-07 | 0.00E+00 | 2.19E-11 | 8.37E-05 | 1.35E-08 | 1.90E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1969 | 8.64E-10 | 4.49E-07 | 0.00E+00 | 2.23E-11 | 8.17E-05 | 1.35E-08 | 1.88E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1970 | 8.64E-10 | 4.24E-07 | 0.00E+00 | 2.26E-11 | 7.98E-05 | 1.35E-08 | 1.86E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1971 | 8.64E-10 | 4.01E-07 | 0.00E+00 | 2.29E-11 | 7.79E-05 | 1.35E-08 | 1.84E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1972 | 8.64E-10 | 3.79E-07 | 0.00E+00 | 2.32E-11 | 7.60E-05 | 1.35E-08 | 1.82E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |

ECF-HANFORD-20-0072, REV. 0

| Site name | Discharge/ Decay- Corrected Year | C-14 | H-3 | I-129 | Np-237 | Sr-90 | Tc-99 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Am-241 | Pu-239 |
|-----------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 216-T-4A | 1973 | 8.64E-10 | 3.58E-07 | 0.00E+00 | 2.35E-11 | 7.42E-05 | 1.35E-08 | 1.81E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1974 | 8.64E-10 | 3.39E-07 | 0.00E+00 | 2.38E-11 | 7.25E-05 | 1.35E-08 | 1.79E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1975 | 8.63E-10 | 3.20E-07 | 0.00E+00 | 2.41E-11 | 7.07E-05 | 1.35E-08 | 1.77E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1976 | 8.63E-10 | 3.03E-07 | 0.00E+00 | 2.43E-11 | 6.90E-05 | 1.35E-08 | 1.75E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1977 | 8.63E-10 | 2.86E-07 | 0.00E+00 | 2.46E-11 | 6.74E-05 | 1.35E-08 | 1.74E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1978 | 8.63E-10 | 2.70E-07 | 0.00E+00 | 2.48E-11 | 6.58E-05 | 1.35E-08 | 1.72E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1979 | 8.63E-10 | 2.56E-07 | 0.00E+00 | 2.50E-11 | 6.42E-05 | 1.35E-08 | 1.70E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1980 | 8.63E-10 | 2.42E-07 | 0.00E+00 | 2.52E-11 | 6.27E-05 | 1.35E-08 | 1.68E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1981 | 8.63E-10 | 2.28E-07 | 0.00E+00 | 2.54E-11 | 6.12E-05 | 1.35E-08 | 1.67E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.68E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1982 | 8.63E-10 | 2.16E-07 | 0.00E+00 | 2.56E-11 | 5.98E-05 | 1.35E-08 | 1.65E-06 | 7.25E-05 | 5.35E-06 | 2.16E-07 | 2.69E-07 | 3.69E-06 | 0.00E+00 | 1.43E-03 |
| 216-T-4A | 1983 | 8.91E-10 | 2.56E-07 | 0.00E+00 | 3.05E-11 | 7.11E-05 | 1.58E-08 | 1.93E-06 | 8.79E-05 | 6.31E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-4A | 1984 | 8.91E-10 | 2.42E-07 | 0.00E+00 | 3.07E-11 | 6.94E-05 | 1.58E-08 | 1.91E-06 | 8.79E-05 | 6.31E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-4A | 1985 | 8.91E-10 | 2.29E-07 | 0.00E+00 | 3.10E-11 | 6.77E-05 | 1.58E-08 | 1.89E-06 | 8.79E-05 | 6.31E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-4A | 1986 | 8.91E-10 | 2.16E-07 | 0.00E+00 | 3.12E-11 | 6.61E-05 | 1.58E-08 | 1.87E-06 | 8.79E-05 | 6.32E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-4A | 1987 | 8.90E-10 | 2.04E-07 | 0.00E+00 | 3.14E-11 | 6.45E-05 | 1.58E-08 | 1.85E-06 | 8.79E-05 | 6.32E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-4A | 1988 | 8.90E-10 | 1.93E-07 | 0.00E+00 | 3.16E-11 | 6.30E-05 | 1.58E-08 | 1.83E-06 | 8.79E-05 | 6.32E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-4A | 1989 | 8.90E-10 | 1.83E-07 | 0.00E+00 | 3.18E-11 | 6.15E-05 | 1.58E-08 | 1.82E-06 | 8.79E-05 | 6.32E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-4A | 1990 | 8.90E-10 | 1.73E-07 | 0.00E+00 | 3.20E-11 | 6.00E-05 | 1.58E-08 | 1.80E-06 | 8.79E-05 | 6.32E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-4A | 1991 | 8.90E-10 | 1.63E-07 | 0.00E+00 | 3.21E-11 | 5.86E-05 | 1.58E-08 | 1.78E-06 | 8.79E-05 | 6.32E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-4A | 1992 | 8.90E-10 | 1.54E-07 | 0.00E+00 | 3.23E-11 | 5.72E-05 | 1.58E-08 | 1.76E-06 | 8.79E-05 | 6.32E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-4A | 1993 | 8.90E-10 | 1.46E-07 | 0.00E+00 | 3.25E-11 | 5.58E-05 | 1.58E-08 | 1.74E-06 | 8.79E-05 | 6.32E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-4A | 1994 | 8.90E-10 | 1.38E-07 | 0.00E+00 | 3.26E-11 | 5.45E-05 | 1.58E-08 | 1.73E-06 | 8.79E-05 | 6.32E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-4A | 1995 | 8.90E-10 | 1.30E-07 | 0.00E+00 | 3.28E-11 | 5.32E-05 | 1.58E-08 | 1.71E-06 | 8.79E-05 | 6.32E-06 | 2.44E-07 | 2.75E-07 | 4.24E-06 | 0.00E+00 | 1.35E-03 |
| 216-T-5 | 1955 | 4.15E-05 | 1.70E-04 | 0.00E+00 | 9.21E-06 | 1.31E-01 | 2.23E-05 | 2.84E-10 | 0.00E+00 | 1.40E-05 | 6.48E-07 | 3.16E-08 | 1.54E-05 | 0.00E+00 | 7.71E-01 |
| 216-T-6 | 1946 | 9.93E-07 | 9.57E-09 | 4.00E-11 | 1.08E-06 | 5.86E-04 | 8.96E-08 | 2.58E-13 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.62E-08 | 0.00E+00 | 7.06E-01 |
| 216-T-7 | 1947 | 2.07E-05 | 5.96E-06 | 4.89E-09 | 4.48E-06 | 7.00E-02 | 1.10E-05 | 1.42E-10 | 0.00E+00 | 9.18E-06 | 4.13E-07 | 6.86E-08 | 9.43E-06 | 0.00E+00 | 9.90E-02 |
| 216-T-7 | 1948 | 4.69E-05 | 1.28E-05 | 1.11E-08 | 1.02E-05 | 1.55E-01 | 2.50E-05 | 3.20E-10 | 0.00E+00 | 2.08E-05 | 9.38E-07 | 1.56E-07 | 2.14E-05 | 0.00E+00 | 2.25E-01 |
| 216-T-7 | 1949 | 4.75E-05 | 1.22E-05 | 1.12E-08 | 1.03E-05 | 1.53E-01 | 2.52E-05 | 3.20E-10 | 0.00E+00 | 2.11E-05 | 9.49E-07 | 1.58E-07 | 2.16E-05 | 0.00E+00 | 2.27E-01 |
| 216-T-7 | 1950 | 6.78E-05 | 3.67E-04 | 0.00E+00 | 1.50E-05 | 2.42E-01 | 3.64E-05 | 4.87E-10 | 0.00E+00 | 2.25E-05 | 1.04E-06 | 2.88E-08 | 2.50E-05 | 0.00E+00 | 1.26E+00 |
| 216-T-7 | 1951 | 8.95E-05 | 4.58E-04 | 0.00E+00 | 1.99E-05 | 3.12E-01 | 4.81E-05 | 6.37E-10 | 0.00E+00 | 2.98E-05 | 1.38E-06 | 4.43E-08 | 3.30E-05 | 0.00E+00 | 1.66E+00 |
| 216-T-7 | 1952 | 4.71E-05 | 2.28E-04 | 0.00E+00 | 1.05E-05 | 1.60E-01 | 2.53E-05 | 3.32E-10 | 0.00E+00 | 1.56E-05 | 7.25E-07 | 1.49E-08 | 1.74E-05 | 0.00E+00 | 9.37E-01 |
| 216-T-7 | 1953 | 3.42E-05 | 1.56E-04 | 0.00E+00 | 7.67E-06 | 1.14E-01 | 1.84E-05 | 2.38E-10 | 0.00E+00 | 1.09E-05 | 5.14E-07 | 0.00E+00 | 1.26E-05 | 0.00E+00 | 9.56E-01 |
| 216-T-7 | 1954 | 8.49E-05 | 3.66E-04 | 0.00E+00 | 1.94E-05 | 2.75E-01 | 4.56E-05 | 5.85E-10 | 0.00E+00 | 2.57E-05 | 1.23E-06 | 0.00E+00 | 3.13E-05 | 0.00E+00 | 3.36E+00 |
| 216-T-7 | 1955 | 1.05E-04 | 4.30E-04 | 0.00E+00 | 2.42E-05 | 3.34E-01 | 5.66E-05 | 7.20E-10 | 0.00E+00 | 3.20E-05 | 1.53E-06 | 0.00E+00 | 3.89E-05 | 0.00E+00 | 4.28E+00 |
| 216-T-8 | 1950 | 3.40E-05 | 2.84E-03 | 8.37E-08 | 4.21E-07 | 2.25E+01 | 7.36E-05 | 1.71E-07 | 7.97E-09 | 8.72E-03 | 3.93E-04 | 9.24E-05 | 8.87E-03 | 0.00E+00 | 5.11E-04 |
| 216-T-8 | 1951 | 3.68E-05 | 2.91E-03 | 9.07E-08 | 4.57E-07 | 2.38E+01 | 7.97E-05 | 1.84E-07 | 8.64E-09 | 9.44E-03 | 4.25E-04 | 1.00E-04 | 9.61E-03 | 0.00E+00 | 5.54E-04 |
| 216-U-12 | 1965 | 8.31E-09 | 1.47E-04 | 1.50E-08 | 1.77E-11 | 3.40E+01 | 1.59E-04 | 2.16E-03 | 9.63E-02 | 7.31E-04 | 2.59E-09 | 4.52E-10 | 4.04E-17 | 0.00E+00 | 1.53E-13 |
| 216-U-13 | 1952 | 1.69E-07 | 1.27E-05 | 4.17E-10 | 2.10E-09 | 1.07E-01 | 3.67E-07 | 8.37E-10 | 3.98E-11 | 4.34E-05 | 1.95E-06 | 4.60E-07 | 4.41E-05 | 0.00E+00 | 2.55E-06 |
| 216-U-13 | 1953 | 2.03E-07 | 1.43E-05 | 5.00E-10 | 2.52E-09 | 1.25E-01 | 4.39E-07 | 9.93E-10 | 4.77E-11 | 5.20E-05 | 2.34E-06 | 5.52E-07 | 5.29E-05 | 0.00E+00 | 3.05E-06 |

ECF-HANFORD-20-0072, REV. 0

| Site name | Discharge/ Decay- Corrected Year | C-14 | H-3 | I-129 | Np-237 | Sr-90 | Tc-99 | U-232 | U-233 | U-234 | U-235 | U-236 | U-238 | Am-241 | Pu-239 |
|---------------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 216-U-13 | 1954 | 2.03E-07 | 1.36E-05 | 5.00E-10 | 2.52E-09 | 1.22E-01 | 4.39E-07 | 9.83E-10 | 4.77E-11 | 5.20E-05 | 2.34E-06 | 5.52E-07 | 5.29E-05 | 0.00E+00 | 3.05E-06 |
| 216-U-13 | 1955 | 2.03E-07 | 1.28E-05 | 5.00E-10 | 2.52E-09 | 1.19E-01 | 4.39E-07 | 9.73E-10 | 4.77E-11 | 5.20E-05 | 2.34E-06 | 5.52E-07 | 5.29E-05 | 0.00E+00 | 3.05E-06 |
| 216-U-13 | 1956 | 3.38E-08 | 2.02E-06 | 8.33E-11 | 4.19E-10 | 1.93E-02 | 7.32E-08 | 1.60E-10 | 7.94E-12 | 8.65E-06 | 3.90E-07 | 9.19E-08 | 8.81E-06 | 0.00E+00 | 5.08E-07 |
| 216-U-5 | 1952 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.82E-06 | 1.69E-07 | 1.87E-01 | 8.40E-03 | 2.47E-03 | 1.91E-01 | 0.00E+00 | 0.00E+00 |
| 216-U-6 | 1952 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.82E-06 | 1.69E-07 | 1.87E-01 | 8.40E-03 | 2.47E-03 | 1.91E-01 | 0.00E+00 | 0.00E+00 |
| 216-Z-7 | 1965 | 6.92E-06 | 4.81E-03 | 0.00E+00 | 1.94E-07 | 7.88E-01 | 1.19E-04 | 2.18E-02 | 6.65E-01 | 6.55E-02 | 2.59E-03 | 2.55E-03 | 4.62E-02 | 0.00E+00 | 9.92E+00 |
| 216-Z-7 | 1966 | 1.61E-05 | 1.06E-02 | 0.00E+00 | 4.58E-07 | 1.79E+00 | 2.78E-04 | 5.01E-02 | 1.55E+00 | 1.52E-01 | 6.02E-03 | 5.93E-03 | 1.08E-01 | 0.00E+00 | 2.31E+01 |
| UPR-200-E-87 | 1949 | 4.15E-06 | 3.30E-08 | 1.66E-10 | 4.48E-06 | 2.27E-03 | 3.73E-07 | 1.04E-12 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.07E-08 | 0.00E+00 | 2.97E+00 |
| UPR-200-W-102 | 1972 | 6.58E-06 | 7.85E-07 | 0.00E+00 | 7.32E-06 | 2.35E-03 | 6.01E-07 | 1.41E-12 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.76E-08 | 0.00E+00 | 4.51E+00 |

^a - The 241-BX-102 results were removed from the SIM Solids output, and they were allocated to the liquids only.

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Appendix A

Software Installation and Checkout Form

